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TABLE OF CONTENTS

Some possibilities in the work of municipal visiting housekeepers, Emma A. Winslow 1
Visiting housekeeping work in Detroit, Mrs. Bessie Bishop Bothwell 6
Teaching the preparation of meals in regular class work, Margaret L. Durdan 12
The daily meals and how to plan them, Emma S. Jacobs 15
Some results of a study of the factors of bread making, Anna W. Williams... 21
A pioneer cooking school, Fanny Eugénie Saville 28
The basic work in pure science in preparing teachers of Home Economics, J. F. Snell 30
The basic work in art in preparing teachers of Home Economics, Mary J. Quinn 35
The Women's Building, University of Illinois, Isabel Bevier 30
College extension in domestic science, Robert Woods 41
An experiment in teaching economics, Sarah J. McLeod 44
Club work in home economics: federal and state control of food, Helen Louise Johnson 46
Studies on flax retting: a summary, Ellen Beers McGowan 50
Home Economics Day and the Richards Fund, Benjamin R. Andrews 52
Editorials 54
Housekeepers' Department 57
Bibliography of Home Economics literature 76
Books and literature 81
Books received 88
News from the field 89

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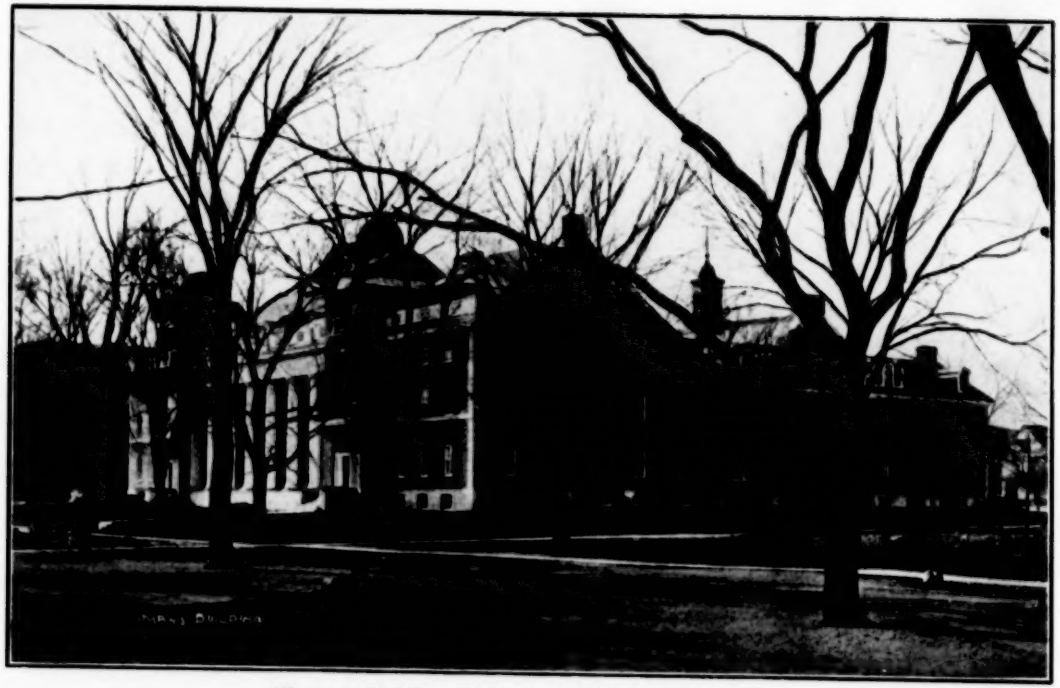

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THE

Journal of Home Economics

VOL. VI. FEBRUARY, 1914 No. 1

SOME POSSIBILITIES IN THE WORK OF MUNICIPAL VISITING HOUSEKEEPERS[1]

EMMA A. WINSLOW

Visiting Housekeeper, Y. W. C. A., Cleveland, Ohio

There is no longer a question as to the value of practical instruction in the home as a means towards social betterment. The standard of living in the individual home governs the standard of living in the community. This is constantly changing, and every effort that we can make to raise home conditions to a higher, healthier plane, can but react to the benefit of the group as well as the individual.

For this reason much interest has recently been shown in the idea of having a staff of visiting housekeepers supported by the city or state, and at the service of the family of average means as well as those below the poverty line, who are already being partially cared for by the visitors of the various social organizations. If developed along certain lines, such work might best be used as a form of extension teaching, and be under the direction of the department of education. My personal opinion, however, is that it would have broader, bigger possibilities if it were recognized as preventive health work and worthy of public support and development for that reason, rather than for its educational value alone. If it is established in Cleveland, it will probably be under the direction of the welfare department which we hope to have, if the proposed new charter is approved by the voters. In New York City it is still unsettled whether it should rightly be

[1] Presented at the Sixth Annual Meeting of the American Home Economics Association, Ithaca, 1913.

carried on under the auspices of the health department or the tenement house commission. It is expected that some experimental visiting housekeeping will be tried there this year; if so, we shall soon have some data which will be of help to us in outlining the future development of this very vital kind of social work.

During the winter of 1912–1913 some experimental visiting work was carried on in Cleveland in connection with regular Y. W. C. A. teaching, in order to show what might be accomplished by a home visitor, trained in domestic science. For one day the teacher acted as a representative of the Associated Charities; on another day as a helper to the mothers of some of the Day Nursery children, emphasizing especially with them, the proper care and feeding of the children when they are at home instead of at the nursery; at another time as a helper to the Visiting Nurse Association in some of their cases where proper diet was felt to be an important part of the treatment. On another occasion charge was assumed (for the city) of a few families who had been recommended by the sanitary inspectors as being in need of assistance. This municipal work, especially, yielded some rather interesting experiences, and the value and importance of such work being carried out on a large scale by the city became more and more evident, while at the same time we became aware of the difficulties which will be encountered in establishing such work, unless it can be more definitely standardized than it is at present.

First, we shall need to make a thorough survey of the field so that we may have full knowledge of conditions and be able to judge what is possible and wise to try to accomplish. We shall need to know just how we can most successfully reach the families who need help, and just what and how to teach them. We shall need to develop a course for training women to be visiting housekeepers so that they will be able to secure the results that we have decided we want to obtain. The experience of those who have already been working along this line will be invaluable to us in further development, but one cannot help but feel that we are ready for a serious study of the possibilities of visiting housekeeping on a large scale, and that we can eventually make this exceedingly practical side of home economics as important in the social world as the more theoretical side has become in the educational world.

Shiftlessness is not as yet recognized as a disease, but it certainly carries in its train a tremendous number of ills. Why is it not worthy of more careful diagnosis and treatment? And who is so likely to

eliminate certain phases of it, as a trained visiting housekeeper? But she will have to be more than a working helper in the home, or the mere carrier of technical information. Shiftlessness may be largely due to ignorance, but the experience of social workers is that an apparently ignorant person is often not doing nearly so well as he or she knows how to do and could do if the effort were made. In order to give the necessary help in such a situation, the visiting housekeeper will need to understand the psychological, sociological, and physiological causes back of the lack of worldly success and well-being, and she will have to know how to plan and carry out a course of treatment which will bring the family up to a higher standard of individual and social efficiency.

Just how shall this work be organized? It might be suggested that one or more visiting housekeepers be placed in a district, to work from a central station which could be used for the purposes of investigation, and also, during certain hours, as a place for consultation and instruction, just as the city milk stations are now used as a place of instruction in child-feeding.

The visiting housekeeper would always be ready to give practical help and advice to anyone who requested it. At first it might be advisable for her to do routine inspection until she become thoroughly familiar with her district and its living conditions, so that she could better judge in what neighborhoods and with what families it would be most worth while to work. Besides working in coöperation with the other branches of the city health department, she should keep in close touch with the social organizations of her neighborhood so that she would know what else was being done for any family in whom she was especially interested, and also so that her type of specially trained services could be understood and called for wherever there was need. One can look forward to the time when a family not living according to suitable standards, will be reported to the visiting housekeeper, just as now a case of illness is reported to the visiting nurse and a case of destitution is reported to the charity organization society.

An objection often made to the suggestion of having visiting housekeepers, is that they will intrude on the privacy of the home, and interfere with the family life so that their visits will be resented by the family. Such may be the case when the visitor is without tact and judgment, and lacks the necessary training to make her quick in suggesting a method of treatment that will remove the wrong

condition which she has criticized. With the majority of families coöperation is easily secured if one can prove to them that the instruction will be worth while financially, socially, or physically. There are of course certain families whose coöperation it will be impossible to obtain, and yet whose present method of living does the most ultimate harm to the community. On the principle that any kind of a home is better for the children than any institution, we hesitate to break up these homes even though we know that they ought not to exist. Most of us, no doubt, can form a mental picture of this type of home. It has been suggested that a probation system be established for such a family so that they would be legally under the care of a visiting housekeeper. It would be difficult to say just how much she would be able to do with these delinquent parents, but it would certainly be an interesting problem to try to solve. Such coercion would probably not often be necessary, but it would seem that, if a family proves unwilling to accept the services of a visiting housekeeper, we should wait until there is legal sanction before we enter a home and try to assume control. Most often, judging from personal experience and the experience of others, the family will be glad to welcome assistance, just as we ourselves grasp at any opportunity to learn how to simplify our living conditions.

Let us consider the training which a woman will need before she can be worthy to call herself a "visiting housekeeper," or a "visiting home-maker." First of all, she will require a large fund of technical information. She will need to have thoroughly grasped the theories and ideals which we have set before us in the study of the household arts, and then she must eliminate all that is not absolutely essential to their application. If ever a woman needs to make thorough motion studies of the ordinary household processes, it is she who is to teach them in the home of a busy woman where much must be quickly taught in the simplest, most elementary way. It is the exceptional mother who will try to repeat anything which has seemed complicated and difficult at the time when it was taught. We shall have to reduce our cooking and housekeeping methods to a minimum of labor and expense before they will be really practical for this kind of work. Much has already been done, but there is still opportunity for valuable research which would mean much to many families.

The visiting housekeeper, then, must be a domestic science expert versed in "The Art of Right Living," and hers will have to be

an all-round course in home-making, rather than one on which the emphasis is placed on any one subject. She will have to know about the sanitary care of the house, the essentials in personal and sex hygiene, the proper care and feeding of the family, the wisest use of the family income, the easiest way to keep household accounts, the right way to launder, how to market and how to take care of the food when it is purchased, the hygienic choice and care of clothing, and the simple schemes for attractive house decoration. She must know how to show a family the way to get as much fresh air as possible into a house, and how to make the family want fresh air and enjoy it. She must be ready to teach the proper use and care of the plumbing, and she will have to know whether the plumbing has been installed according to law, or whether there are defects which can be reported and remedied. While inspection will be a minor phase of her work, still she should be quick to notice any violations of the city sanitary code, and should see that legal standards are observed.

As was said at the beginning, a visiting housekeeper will need to be more than the mere carrier of technical information. When she has proved herself to be a true friend of her families by helping them to live better, happier lives, she will find that she has come to have a remarkable influence with them, and that they will look to her for information and advice on many subjects outside her own line. For this reason, our ideal visiting housekeeper will need to have a broad social training so that she will know how to develop the kind of all-round men and women whom we want for citizens. This she may help to do by interesting them in the various educational and recreational opportunities which are so often neither understood nor appreciated by them.

Her work is not intended to take the place of other social and educational work already being done, but will be most valuable as it supplements it and brings it closer to the individual families who are in need of it, and whom such agencies are trying to reach.

Considering it from the home economics standpoint, no doubt all will agree that it will help to put the knowledge which we possess into practical application with a resulting benefical effect on the health and standards of living of both the present and the future generations. It cannot be too strongly urged that we use all our influence to bring home economics into the homes of both city and country through the agency of field-workers trained to be truly helpful home-makers.

VISITING HOUSEKEEPING WORK IN DETROIT[1]

MRS. BESSIE BISHOP BOTHWELL

Visiting Housekeeper, Associated Charities, Detroit, Mich.

The work of the Visiting Housekeeper in Detroit was started as an experiment on January 1, 1913, by the Central District Advisory Committee of the Associated Charities. The funds were solicited in small amounts from societies and individuals, in order that as large a number as possible might be interested in the work.

It took some time for the social workers to learn to use the housekeeper's services and for the first few weeks the work was very much hampered by the fewness of the cases referred to it. At the end of the first six months we find that the work is really far heavier than one person can possibly manage, and already definite plans have been made to enlarge it in the very near future.

We found at the outset that the referring of cases to the Visiting Housekeeper, by the different coöperating organizations, made it possible for her to gain a friendly entrance into the families. Perhaps the most valuable were the introductions given through our nurses and social workers, for they had already been of true help to the family in question; therefore, when they suggested to a mother that she allow some one else to come in and help her in the matter of diet and home-making, the Visiting Housekeeper found that the way had already been paved, and she was sure of a more hearty reception than otherwise would have been accorded her.

Of the 96 cases covered in the last six months' work, the largest number, 38, were sent by the Babies' Milk Fund, whose promoters were the first to recognize the value of the work and to find that interest in the child's welfare does not end when the child has reached its second birthday; but that the diet is as essential to the growing child as is to the baby the scientific milk formula, which has been ordered by the doctor and carefully prepared under the supervision of the nurse. Therefore a large part of the Visiting Housekeeper's duties has been to teach the mother how to prepare proper foods for the growing child, and what she should feed the older children. The doctor of the Franklin Street Settlement recently reported an improved condition of a little baby, with tendency to "rickets," who was referred to us

[1] Presented at the Sixth Annual Meeting of the American Home Economics Association, Ithaca, 1913.

by the baby's nurse, with the request that we show the mother how to prepare certain articles of diet, which the doctor had ordered, to supplement the milk formula.

We find among many of our foreign families that the baby is weaned from a bottle of milk to a bottle of black coffee, and the overcoming of this custom, which has possibly been that of many generations, is a matter which takes not only tact, but time and perseverance. Many of our mothers know absolutely nothing of the value of cereals, vegetables, and milk for their growing little ones, and in some cases the children live on bread and coffee or on bakery goods.

One of my favorite cases is typical of a large class that has great need for just the kind of help we try to give: The little woman is only twenty-seven and the mother of five children. After a miserable girlhood, with a drunken father, and three years in factory life, she married at the age of seventeen. Her husband is not strong and often loses his wages, $2 a day, through sickness. She was delighted to have some-one teach her to make bread, biscuits and muffins and to use dried peas, beans and cereals. When our work with her began her children were so thin and frail that they were pathetic, but under a wholesome diet they are gaining in weight and strength. This mother, after several visits from the Visiting Housekeeper, expressed her appreciation of the fact that the children were gaining under the new diet, by saying: "It was not that I was not willing to buy the things for the children, only nobody had ever told me what were the best things for me to buy." Here we have the opportunity to help a mother by carefully planning with her the use of a limited income. This family has probably shown greater improvement than any other for the reason that the mother is an intelligent woman, though formerly untaught. The starting point was a desire to learn how to make bread, and many other issues have developed from this breadmaking lesson, until we feel that the general condition of the family is decidedly better.

Again, cases come to us by direct appeal. A man recently asked that his motherless children be placed in an institution. We persuaded him to take light housekeeping rooms in the house of a good, motherly woman. Twice a week after school, the oldest, a girl of fourteen, is given lessons in home-making for her father and brother, thus preserving the family life.

Cases come, too, from the Visiting Nurses' Association. A typical one was that of a little Polish girl of twelve years, whom we in-

structed in cooking and in caring for her father and five children, while her mother was confined to her bed.

One of our families we found paying for two "light housekeeping" rooms in a dirty and forlorn house. The mother, shiftless in the extreme, had no interest whatever in the condition of her home. We found the man drinking and contributing very little to the support of his family, and learned that their household possessions were in storage, held for nonpayment of charges. This time we took the man into our confidence and promised to find a new home for the family and to see that his wife kept the home in a better condition if he would in return work steadily and do for his family as he should. We found a good little six-room cottage and helped the mother to clean it. We got the furniture out of storage and put the house in good order. During the five months which have elapsed, the man has been working steadily and taking care of his family and things in general have been running more smoothly.

Another family was referred to us by one of our visitors because of its general shiftlessness which had brought it into debt and other difficulties. In this case the man paid over all his wages each week to the Associated Charities, and from this sum the groceries, etc., were bought. The meals were planned by the Visiting Housekeeper. At the end of three months we found the family almost completely out of debt and the mother managing her own buying and keeping her living expenses within the amount which the Visiting Housekeeper allowed. This was a valuable lesson in economy to a shiftless woman, and a lesson which she will not soon forget.

Another interesting case, referred to us by a church visitor, was that of a Syrian woman who wished to learn to make American bread. She so far appreciated the lessons and the spirit of the work that she expressed her gratitude by asking if she might act as interpreter for the Visiting Housekeeper whenever there should be need for such service.

While there is much indifference to be met in many of the homes, we can but feel encouraged with the many cases where improvement is noted, and with the general feeling of friendliness that one finds on all sides. Even a woman who seemed to the local visitor to be the most hopeless of home-makers has come to the office to ask for the help of the Visiting Housekeeper. This woman was referred to the Visiting Housekeeper by the Juvenile Court. There were nine children in the family, and the mother was shiftless and lazy as well as poor.

The home was so badly kept that the children were constantly sent home from school on account of their filthy condition. A scrub woman cleaned them up thoroughly and gave the family a fresh start. In a week they were as dirty as ever and one of the girls was sent home from school with word from the teacher that "she needed a bath." "Indeed!" said her mother, "and Lillian will have no bath. Didn't I give her one last winter and she had pneumonia and it cost me $4? She will have no bath until warm weather." And not until her three girls had been removed from the home for three months, with a threat of permanent removal if the home was not improved, did she become meek enough to accept instruction. Now they have started to buy a new house and are in many ways making great efforts to improve conditions so that the children will be allowed to return.

Personal hygiene plays a large part in the work of a Visiting Housekeeper, and many little helps and suggestions can be given, which are sometimes grasped by the mother, and again by the older children in the family. One little girl, after her mother had been shown how to shampoo her hair (and she enjoyed the process), naively remarked that she had had "a bath in the tub once," and thought it a great event. The following week she was taken over to our dispensary, bringing her own clean clothes, and was given a thorough bath, shampoo, etc. The father and mother were so pleased with her general appearance that the baths can no longer be counted on the fingers of one hand.

In the original plan, we did not outline any class work, feeling that the ground could be covered to better advantage in the homes; but we have found that more efficient work can be done by a combination of class and home work, and our classes are beginning to be a large part of our plan.

One of the specially interesting features of this class work is our Hungarian Mothers' Class, which was originally established by the Babies' Milk Fund at the Solvay Guild Hall in Delray, a district largely Hungarian, where most of the work must be conducted through an interpreter. This class has suffered many vicissitudes. As the mothers bring their little ones, the attendance varies greatly. Of late the mothers have taken a much more lively interest and frequently ask a week or two ahead if the Visiting Housekeeper will show them how to prepare a certain food the next time. These meetings are of a very informal nature and seem to foster a good neighborhood spirit. The coöperation of the Baby Nurse, who is ever ready to lend her able assistance, is of vital importance. Her demonstration of the proper

method of bathing a baby created as great an interest in the class as was created by the cooking demonstration, if not greater. We frequently talk to these mothers concerning the care of garbage, preventing of flies in the house, and other topics of sanitation, while the meetings are given a social aspect by serving afternoon tea and the dish which has been cooked by the Visiting Housekeeper, recipes having been previously typewritten in Hungarian.

On the fifth of March we started our first Girls' Cooking class in our newly established Domestic Science Kitchen in the Associated Charities offices at Delray. It was attended by five of the older girls from the families under the care of the Visiting Housekeeper. Improved neighborhood life has manifested itself here by requests from the girls for permission to bring their friends who live next door or across the street, until now we have 36 girls enrolled in this one locality, and are holding three classes a week, ranging from ten to fourteen girls each, the number being limited by the size of our kitchen. The work in these classes differs from general public school work in several particulars. We do not have all the individual equipment which is used in public schools, choosing rather a good sized gas range and such cooking utensils as the girls would be likely to have in their own homes. The recipes are not for individual work but for quantities suitable for the average family, and always take into consideration economy and food value. The children work in groups of two or four and are allowed to take home the finished product.

The question is frequently asked, "Why have this cooking class, when the same work is covered by our Public Schools?" The cooking lessons of the Public Schools begin in the A 6th grade, and thorough investigation has shown that many of our children are taken from school at fourteen and put to work without ever having reached this grade, which means they have never had the instruction we give. One very interesting experience in this work was a visit from one of our special teachers of deficient children. Out of one class of thirteen girls she recognized six as deficient children who had been pupils of hers. One of our ablest pupils had been with her in the 3d grade for three years and there was little hope of her being promoted, yet all her work with us had been so excellent that we had never discovered her deficiency. Frequently the children bring us some article of food that they have made at home by one of our recipes, and we find that, in nine cases out of ten, the dish made in the class is repeated

in the home. Many times we can reach the parents through the children, but if the older people cannot be reached, we have at least "sown the seed" in the rising generation and are sure that it will bring forth some fruit.

Classes are taught by volunteer students from the domestic science department of the Thomas Normal Training School, whose directors are always ready to furnish us assistance in our work.

As no financial aid is given by the Visiting Housekeeper, the cooperation of other societies and individuals is necessary; and very frequently situations have been relieved, at our suggestion, by the material aid of the Associated Charities, the Babies' Milk Fund, the Poor Commission, church organizations, and philanthropic societies, as well as by private individuals who are either interested in the work generally, or in some particular family.

In the month of May, 176 lessons were given and 42 other visits made in contrast to the 6 lessons and 51 calls in January, the first month of our work. Judging from such an increase, there is need for more systematic and organized effort in this line. An interesting feature of this work is that the family as a whole is considered, while in much other work of a similar character it must of necessity be the individual that is the center of interest.

In classifying the calls from our coöperating agencies, we find they are of several types. The educational side where definite instruction is asked for; emergency work, as in case of sickness; and the general reconstruction of the home conditions. These are so often completely interrelated that they can be profitably carried on together.

Perhaps in no city in the country are the problems the same as those in Detroit. The unprecedented growth of the city, the doubling of its population in the past seven years, the hordes of foreigners arriving with the starting of each new automobile factory, all complicate our social problems. The housing problem alone is a matter of great anxiety. We are just beginning to realize that we have outgrown ourselves and that work must be done in a larger way. The scope of the work is unlimited, and a glance into the future, however vague and visionary in many of its aspects, points to a time when this work can be made to reach every need of the home, and all housekeepers will welcome the thought that in their hour of need they may turn for effectual help to a staff of scientifically trained Visiting Housekeepers.

TEACHING THE PREPARATION OF MEALS IN REGULAR CLASS WORK[1]

MARGARET L. DURDAN

Buffalo, N. Y.

The circumstance which made this work a necessity was the opening of an open air class in a regular school in November, 1910. The work, instead of being modeled and equipped on lines meeting the need of a different city under different circumstances, was simply opened with a room, a teacher and three children. A Domestic Science teacher was appointed, whose duties were to include planning and supervising the preparation of all food materials used in the open air class; and this phase of the special work was to be an important and vital one.

Our first meal was prepared in the teachers' dressing-room and consisted of cream of tomato soup and bread and butter and was served to the children in their class room. The dishes and silver were borrowed and drawing paper was used for a table cloth. From such a beginning by gradual development and with most helpful assistance from the Director of Domestic Science, we concluded our first year in a properly equipped, bright, and cheerful combination dining-room and kitchen, where each day twenty children were served two luncheons and one dinner. Because of this combination form, our room did not lend itself to the ordinary equipment. In its place we had four kitchen tables, three dining-room tables, nine non-extension tables, chairs, cabinets, stove and sink. The cabinet devoted to china and glass was placed in the dining-room space; the one for kitchen utensils, supplies, and often-used equipment was near the stove and sink. The stove was a six burner, double oven type, affording sufficient space for the work. The room was made very attractive by the addition of a few plants or ferns, a picture or two and plenty of sunshine.

When the work became well organized, provision was made for classes. The usual procedure for organization could not be carried out, except for afternoon classes, because there was work to be done at once and that work was the preparation of a meal for twenty children. The ideals and aims of the work were those of the prescribed

[1] Presented at the Sixth Annual Meeting of the American Home Economics Association, Ithaca, 1913.

course but the amount of actual class work was decreased. The uniforms appeared at the second or third lesson; the care of the kitchen utensils and the housekeeping all grew out of careful supervision and most willing attitude on the part of the girls. For the first month the menus were simple—Hamburg loaf, mashed potatoes, boiled carrots, bread and butter, and stewed prunes. The lesson plan resolved itself into a work plan. The longer processes were begun and sometimes finished, or if there was a long cooking period, the shorter processes, such as setting the tables or spreading the bread and butter (always done for the children in order to save expense and time), were finished in the interval. General principles and rules were made plain by class discussion. The dining-room tables were used as desks and when the class was of the eighth or ninth grade, the note-book work was the same as that required of pupils in the regular classes. In such cases the lesson of the day was presented simply and concisely and the work thoroughly discussed while the food material was being prepared. Sometimes this was done with one group and sometimes with two, while a third group was preparing the dinner. The groups took turns in the kind of work they did.

The fireless cooker played a prominent part in these lessons. Whenever possible, the meat or pork and beans or other vegetable proteid food was placed in the cooker the night before, making less work for the class period.

Pleasing characteristics had many opportunities for development. Helpfulness, generosity, and unselfishness were constantly in demand. Personal responsibilities were easily shifted especially in the housekeeping work. However, it was the rule rather than the exception to find that girls remembered their duties and were ready and willing to do the work required to leave the kitchen as neat and attractive as they found it and ready to be used as an open air children's dining-room.

The work, though perhaps not entirely satisfactory from a pedagogical standpoint, was most commendable from a home and practicable point of view, especially for younger children. The equipment was very homelike, the method of procedure familiar and the constant reviewing of methods gave homework a firm basis. The food materials were economical, the combination of food principles well balanced and so simply prepared that the children were able to carry the whole process into the home.

Some menus, typical of those served in the school follow:

Scrambled Eggs — Mashed Potatoes
Beets — Bread and Butter

Beef Stew — Carrots and Potatoes
Stewed Apricots — Bread and Butter

Stewed Lentils — Mashed Potatoes
Cabbage Salad — Bread and Butter

The average energy value of a meal was 1100 calories; the average cost was 10 cents per person per day.

These lessons were especially valuable to the pupils of the open air class, where the boys as well as the girls had opportunities to prepare the dinner. The work with the boys was indicative of the possibilities there are for helping family dietary. Perhaps three-fourths of these children were victims of malnutrition, and this work opened the only channel for home reformation. We were constantly sending recipes, directions for combinations of food, and names of new foods—at least foods new to them—to the homes of the children and often the boys as well as the girls would be responsible for the preparation. Work along these lines is guided very largely by the personality of the teacher; and through love, patience, and an appreciation of detail, the work finds satisfactory results. There is reiteration, constant personal attention, and detail almost unending. Until system permeates the work and the daily changes affect only the net work, the routine seems difficult. But when the work finds direct application and gratifying results and is made educational—not menial—it finds wonderful enthusiasm and surprising ability even in young children.

THE DAILY MEALS AND HOW TO PLAN THEM

EMMA S. JACOBS

Director of Domestic Science, Washington, D.C.

It behooves the housekeeper at all times to study conscientiously the feeding of her family and in these days of high prices the necessity for so doing is becoming urgent.

The amount of effort and calculation that must be expended in order to keep the outgo for food within reasonable limits compared with other family expenditures depends on the family income and the number of people to be fed. It is not the purpose of this article to show how in cases of great need the largest possible amount of nourishment can be obtained for a given sum, but rather to deal with the food problem as it presents itself to people of average income.

We must have enough of the essential foods for our bodies, which are living machines, if we are to be a productive people. These machines transform the energy the sun has stored in the foodstuffs into body substance, and into energy and work of various kinds. This human machine is a thinking and self-directing machine whose creative power is great, hence the food selected should be such as will meet its need with the least possible waste. The selection is not simply a matter of pleasing a capricious palate, important as is the function of the palate.

As our foodstuffs are of higher price than heretofore we must know which foods will give the most energy for the least money and which are the most economical builders. To determine this we must know the composition of the various foods, and the value of the various constituents, then we must know the relative cost of foods and the quantity needed to give the energy required to keep the body in healthy working order.

COMPOSITION OF FOODSTUFFS

Food materials are, with a few conspicuous exceptions such as sugar and salad oils, made up of many compounds, but in spite of the number and variety of these constituents it is customary to group them under five heads or divisions: Proteins, fats, carbohydrates, mineral salts, and water. To distinguish them from the food material as a whole these compounds (particularly the first three) are often called nutrients.

Protein contains nitrogen, and since nitrogen is necessary for the formation of tissues, it is frequently called the tissue-building nutrient. Foods conspicuous for a high percentage of protein are lean meats, eggs, fish, poultry, cheese, dried beans, peas, cowpeas, and lentils. Not far below these foods in percentage of protein contained are the cereals, oats, wheat, corn, and others. This statement should not be taken to mean that protein is necessarily in excess of other constituents in these foods. In meats, for example, even in those which are called lean, fat may run higher than protein; in cereals the percentage of starch is several times that of protein; and in the legumes (beans, peas, peanuts, and others) starch and often fat are high. Protein also supplies energy.

Fats contain no nitrogen, and so can not be used for tissue building, though they do assist, as each cell must have some fat. Fats are useful chiefly for fuel. Foods conspicuous as being all fat or as having a specially large percentage of fats are fat meats like bacon, or salt pork, butter, lard, nuts, cream, and peanut, olive, and cotton-seed oil.

Starch, sugar, and cellulose (the principal carbohydrates) also contain no nitrogen and are fuel foods. Cellulose escapes digestion except when very young and tender, but when digested it serves as fuel. Foods having a large percentage of starch include the cereals and some legumes. Sugar exists not only as cane and maple sugar but in honey and in small percentage in fruits. Cellulose forms the framework of all plants; although, not digested unless young, it has a most important function in that it gives bulk to the mass of digested food and stretches the muscular walls of the alimentary tract, thus promoting peristalsis; it also spreads the digested nutrients over a wider surface, thus facilitating their absorption.

Mineral salts are found in our foodstuffs, principally in the green vegetables, fruits, milk, and eggs. Some of them are needed for bone and others for tissue building; some to aid digestion; and some to maintain the alkalinity of the body's fluids. As these are important processes the articles of food which are rich in mineral salts must not be omitted from the diet.

Water is found in all foods and the characteristic flavor of the food is due to the presence of sugar, mineral salt, or essential oil which is held in suspension or solution in it.

It has been found from experience that the majority of people thrive best on a mixed diet.

From the table on page 61 it will be seen that meat, eggs, cheese, dried peas and beans, cereals, nuts, and milk furnish most of the pro-

tein necessary for building and of these the peas, cereals and nuts are cheaper than meat and eggs. The first contain much fiber from which the protein must be digested, hence for the majority of persons the building process is slower and more difficult. For this reason the meat diet has been relied on for tissue building. The protein of milk, eggs, and cereals is particularly adapted to the building of tissue, especially after wasting disease, and these articles also contain much of the energy-making substance in the form of fat or starch.

Those who have been accustomed to eating much meat protein, which at the present day is a high priced food, must be careful if they change to a more largely vegetable protein diet to do so gradually so that the various parts of the digestive system may have time to adjust themselves to the change. It is wise to learn to substitute legumes, cereals, cheese and nuts for part of the meat if excessive.

Another important thing to consider when purchasing food is the amount of refuse or non-edible materials for which one pays. The proportion of these will often make a high priced article really a cheap one and a low priced one, expensive. Bone, fat and tough ends can be utilized but why pay for them the price of tender meat. A piece of shoulder, clod or round has little fat or bone; a piece of neck much fat and bone. A larger chicken or turkey has more meat in proportion to the bone and other refuse than a small one has. In a raw cereal one usually buys, for the same money, much more nutrient material than in a ready cooked one. In these days of fireless cookers the heat necessary to cook the cereal adds little to the cost of it. Low priced canned goods are often slack-filled cans or low quality goods. It is poor economy to buy overripe fruit simply because it is low priced. Much may have to be discarded during the process of picking over and thus the actual price be raised. This question of purchase is one which requires knowledge of values as well as close scrutiny to be sure that the full weight or measure and the quality paid for are given, but this lesson must be learned by every purchaser.

Source of Energy

All food nutrients, except the older cellulose, mineral salts, and water, are burned in the body, thereby yielding energy; but the amount of energy obtained from 1 ounce of fat is more than twice as great as that obtained from the same weight of either protein or carbohydrate. In order to get the benefit of the fuel foods there must be a large supply of

oxygen, hence those leading an indoor, sedentary life unless they take long walks or other out door exercise, must eat fat, starch, and sugar in moderation; but life in the open air allows us to increase the amount of these foods. Protein compounds should not be depended upon to supply energy, although they contribute to the total the body receives from its food supply.

Experience and experiment have shown that the food provided for a man of average weight supplies between 2 and 4 ounces of protein per day, and that if an average of about 3 ounces is secured by a man at moderate muscular labor he will be kept in a well nourished state. The amounts usually found in the average American diet would supply protein in about this range. When long periods of time are considered, the average amount per man per day has been found to be not far from 3 ounces.

Amount of Food

A normal, healthy appetite is the best guide as to the quantity of food to be eaten, but in order to determine how much to purchase and prepare, find out the sex, the age, the weight, and the work of the various individuals composing the family, and calculate the amount of energy which the food must yield.[1] Find out how much energy is stored in a unit portion of the various food materials, then combine these foods in such ways as to give a palatable meal containing the required amount of energy, taking care to have not more than 3 to 4 ounces of protein per man. If one dish gives too much, substitute one having less protein but keep the energy value as shown in the table below.

The unit for measuring this energy is the calorie. It represents the work required to raise the temperature of 1 kilogram of water 1°C. The average human body requires enough energy every hour to raise 2½ pounds (a kilogram) of water from the freezing to the boiling point or as much as would result from the burning of two-thirds of a pound of coal. More energy is required by a man at work than by a man at rest; in winter than in summer; by a tall person than a short one; and where more energy is needed the amount of fat, starch and sugar rather than proteid should be increased. A woman needs four-fifths as much as a man and children three-fourths or less, according to the age and general condition.

[1] See table on page 60. Also U. S. Dept. Agr., Office Expt. Stas., Bul. 28. The Chemical Composition of American Food Materials.

It has been calculated that a man of average height (5 feet, 10 inches), weighing 150 pounds needs:

ACTIVITY	ENERGY	AMOUNT OF PROTEIN	
		Low	High
	calories	*ounces*	*ounces*
At rest	2000 to 2500	1¾ to 2	2¼ to 3
At moderate work	2500 to 3000	2 to 2½	3 to 3½
At hard work	3000 to 4000	2½ to 3	3½ to 4

The whole amount of food for the day may be eaten in one, two, three or more meals as desired, but experience has shown that the average person is kept in good physical condition on three meals a day. The amount of food may be divided equally between the three meals but usually the breakfasts and luncheons are light meals.

Dishes for the Meals

The breakfast usually consists of a cereal, a fruit, a meat relish or eggs or fish, bread, butter, and a beverage; the lunch, of a substantial dish such as a stew, a milk soup, a hash or escalloped dish, bread, butter, a beverage, and a sweet relish of some kind. Dinner consists of a clear soup, a meat or fish of some kind, one starchy vegetable, such as potato, rice, or macaroni, and a green one, as asparagus, green peas, corn, string beans, or tomatoes, a salad or dish of greens, as spinach, kale, beet tops, or chard, bread, butter, and a dessert of some kind.

If beef balls or mutton chops are served for breakfast do not serve meat for luncheon, and use either fish or chicken for dinner.

The soup for luncheon is usually a milk soup but a milk soup may be served for dinner if the meat is a very light one.

When meats rich in protein are served let the dessert be one having little protein, as for instance one of the fruit or gelatine desserts with or without cream. When the food served for breakfast and luncheon has been deficient in protein it is reasonable to use a custard dessert with a high protein meat.

Fruit jellies, pickles and condiments add to the cost of the meals but do not add materially to the energy.

Vegetables left from one meal may be made into a soup with milk,

into an escalloped dish with a sauce, or into a salad. Meat left from a meal may be mixed with an appropriate sauce and served as a chartreuse or an escalloped dish, or it may be served as a salad, or mixed with gelatine which has been flavored with herbs and meat juice, then chilled and served either as cold meat or a salad.

The usual ratio between the nutrients is one part of protein, one of fat, and three or four of sugar or starch. The fat and carbohydrate may be increased or diminished as desired but the protein can be changed only within very narrow limits.

The mineral salts cannot well be measured but if milk, cereals, and green vegetables form a conspicuous part of the diet the question regarding the amount of mineral matter need never be raised. Be sure that enough water is taken between meals to insure thorough digestion of the food and elimination of the waste.

Computing the Nutritive Value of the Meals

The nutritive value of any given diet may be computed if we know the quantity of each food eaten and its composition.

The method used in the laboratory[2] is rather troublesome for housekeepers, and therefore simpler methods accurate enough for such purposes have been suggested. One of these is to keep track of the number of portions of each food prepared per person per meal or per day and, from a table showing the protein and energy content per portion of a variety of foods, determine the total protein and energy supplied by all of the foods used in the period under consideration. It is a simple matter, for instance, to note the protein supplied by one or more portions of bread, one or more portions of meat, and so on, and add them together. Experts in hotels and restaurants who have to do with such things will serve portions of cooked food which vary only slightly in weight from day to day for any given food. This is much less the case in homes where portions vary within rather wide limits, but as suggested above a housewife, by a little study, can find the approximate weight per person of each food that she prepares.

[2] U. S. Dept. Agr., Office Expt. Stas., Circ. 46. The Functions and Uses of Food.

SOME RESULTS OF A STUDY OF THE FACTORS OF BREAD MAKING[1]

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This study was carried on in 1912 at the University of Illinois in the research laboratory of the Household Science Department. Its object was twofold, namely, to determine the influence of certain factors upon the qualities of bread, and to collect some data and establish some facts which might serve as a basis for ultimate standardization. There are many successful methods of making good bread, but there is a distinct lack of knowledge regarding the exact reasons for success or failure. It was with the idea that certain causes might be definitely proved to give certain results that this work was undertaken.

Various processes were tested until one was established which could be depended upon to give uniform results and to give a loaf of bread which could be used as a unit of comparison. This was the process finally chosen: 1 cup (260 cubic centimeters) of water, measured at room temperature, was warmed to 42°C; ¾ of it was combined with the seasonings, 1 teaspoonful salt, 1 teaspoonful sugar, and 1 teaspoonful butter. The remaining ¼ of the liquid was used to soften the ½ cake of compressed yeast. The yeast mixture was added to the dissolved seasonings; then 440 grams, or 3.6 cupfuls of spring wheat flour, slightly warmed, were beaten in gradually. The dough was kneaded by hand for 20 minutes, and allowed to rise at 26°C. until it exactly doubled its bulk. It was then kneaded for 5 minutes, and allowed to rise again to the same bulk. It was then made into a loaf with little kneading, and again allowed to rise until doubled in bulk in the pan. The loaf was baked in a gas range for 45 minutes. The oven temperature was 180°C. for 10 minutes, 180°–235° rising very gradually during the next 15 minutes, and 218° for the last 20 minutes. The size of the pan used was 8½ x 3½ x 3 inches. This method required about 7 hours for completion.

After the preceding method with its results was definitely established, the subsequent experiments consisted of variations in the factors studied. The factors were as follows: 1, Liquid Factor; 2,

[1] Presented at the Sixth Annual Meeting of the American Home Economics Association, Ithaca, 1913.

Yeast Factor; 3, Fermentation Factor; 4, Manipulation Factor; and 5, Temperature Factor. It will be seen that it was impossible to study one factor entirely separate from the others. There was, however, one main factor in each set of experiments.

The Liquid Factor. The general method of bread making already established was followed, at first, with variations *only* in the proportion of moisture. To carry out this study successfully it was found best to keep the amount of liquid constant, and vary the amount of flour.

The results obtained and the conclusions reached were these:

Soft doughs produce well shaped loaves, but small in volume and somewhat too flat on top; the texture is rather coarse, and in the case of exceedingly soft doughs the crumb is somewhat dark, tough, and clammy. Also, the bread made from a very soft dough dries out more rapidly on keeping than does one made from a rather stiff dough. Soft doughs yield larger weights of bread in proportion to the flour used than do stiff doughs; for this reason the baker finds it advantageous to use soft doughs.

Moderately stiff doughs give the most satisfactory breads. The stiffer the dough the more rounded is the top, the greater is the tendency of the loaf to crack open on the side, the finer is the texture, the whiter and drier is the crumb, and the richer is the color of the crust. Moderately stiff doughs rise more in the oven, hence yielding larger volumes of bread than do either soft or stiff doughs.

The longer the process the larger is the amount of flour required by a given amount of liquid.

The loaves, unanimously accepted as the best, were the ones containing 440 grams or 3.6 cupfuls of flour to 260 cubic centimeters, or 1 cupful of water, making the moisture 59 per cent by weight. The Washburn Crosby Milling Company use, in their test bakeries, 60 per cent by weight of moisture for this same flour.

A flour will vary somewhat from time to time in liquid requirement because of its variation in moisture content, as influenced by the temperature and humidity of the surrounding air. Flour kept over night in an incubator at 40°C. was found to have lost 2.1 per cent moisture.

The amount of flour required to give a dough of a certain consistency varies according to the kind of liquid used. Water produces a finer textured, sweeter flavored, but more inelastic bread than do any of the liquids ordinarily used for mixing. But such bread dries out more rapidly than any other.

When potato water is used the lightness and sponginess of the bread is increased to a marked degree. The use of milk, either sweet or sour, or of potato water heightens the color of the crust. The use of potato water also increases slightly the rapidity of fermentation, but the use of buttermilk increases it somewhat more. Potato water increases greatly the keeping qualities of the bread in which it is used. Milk, either sweet or sour, also increases such qualities, but to a less extent.

The Yeast Factor. At first, the influence of variation in the amount of yeast was studied. The best quality of compressed yeast obtainable was used. The conclusions reached were these:

Increase of yeast up to the amount of 6 cakes to the loaf causes increase of volume, but greater amount of yeast lessens volume. Increase of yeast up to 4 or 5 cakes, adds to the fineness of texture but a greater amount produces coarseness.

Increase in yeast causes a very gradual but constant increase in the tendency to crumble and in the pallor of the crust. An exceedingly large excess of yeast seems to cause deterioration of flavor, this deterioration being more in lack of flavor than in any unpleasant taste, provided the yeast is of good quality.

Comparison was here made with the results of some similar experiments made by Miss Ruth Wardall at the University of Illinois in 1907, in which pure yeast cultures were used. Her results were stated as follows: "The flavor of loaves containing 0.9 of a cake and 1.8 cake was very good; those containing 3.6 cakes and $7\frac{1}{4}$ cakes had no taste of yeast, as in the so-called yeasty bread, but they lacked, entirely, any flavor of the grain, and were rather tasteless, although quite eatable." Then, in conclusion, she says, "the secret of flavor is surely not to be brought to light by the amount of yeast used." The possible explanation for the difference in results lies in the fact that in the writer's experiments the yeast was not of so pure a quality as that used by Miss Wardall. Both sets of experiments agree, however, in regard to effect upon texture and crumb, and in regard to a loss of the delicate flavor of the wheat grain when more than 3 cakes to the loaf were used.

Other conclusions, drawn from the experiments on quantities of yeast are:

The volume of a loaf is influenced by the power of the yeast to act in the oven, this power being proportional to the amount of yeast. Length of time of rising in the oven is increased by an increase in

amount of yeast. When a good quality of yeast is used an increase up to 2 cakes per loaf is to be recommended for shortening time and producing better bread, although it can not be recommended from an economic standpoint.

The next set of yeast experiments was conducted to determine the effect of the differing proportions of liquid yeast when carried over night in a sponge. Two sponges were set over night, one containing 1½ cupfuls of active liquid potato yeast and ½ cupful warm water; the other containing only ½ cupful of liquid yeast and 1½ cupfuls of water. The same amount of flour, sugar, and salt were added to each. In the morning the first sponge had risen and fallen, the second had risen more slowly and had not fallen. After being made into dough, both rose alike, baked alike, and were indistinguishble in any way. The conclusions reached were:

Yeast, if introduced in small quantity into a sponge, will multiply until it assumes a maximum concentration, and if introduced in large quantity will cause a greater immediate production of gas, but will not give a more vigorous sponge ultimately.

A small amount of yeast will give the same results as a larger amount if allowed a sufficient length of time in a sponge.

The Fermentation Factor. Variations in the regular method were made in the degree of fermentation and number of risings. As far as possible a quantity of dough was made and handled in a mass. When it was necessary to divide it, equal weights were taken for all loaves. Kneading was eliminated as far as possible, gas being let out by pressing or squeezing down the dough. The results obtained were:

Repeated fermentations, when kneading was eliminated, tended to produce fineness of texture, whiteness of crumb, and mellowness whose successive stages are technically described as *silkiness* and *pile*. Pile is the quality of bread which makes it possible to pull off little flakes and strips from the side. When an extremely white and silky bread was obtained the flavor was somewhat sour. It may be that the same products which cause acidity, such as is caused by lactic and acetic acids, help to mellow the gluten and produce this silkiness.

Change or letting out of gas, merely by cutting down, tended to prevent sourness by accelerating yeast growth, even though the dough was allowed to stand for a longer time.

Flavor was developed by fermentation, being first sweet and nutty, then slightly alcoholic, and finally acid.

Fineness of texture was much more dependent upon the degree of rising allowed in the pan than upon the extent of the previous risings. Even doughs which were permitted to rise and fall in the bowl stage gave fine grain on proper treatment in the pan. The degree of lightness in the previous rising seemed to make little difference in the final texture; increased fermentation in the first stages, however, tended to increase silkiness and whiteness. Underlightness in the first risings showed in the finished product in lack of mellowness and elasticity. Bread seemed better for having been allowed to reach its maximum expansion once during the process.

Bread allowed to finish its rising in the oven is undoubtedly better in texture, although more care is required in baking to give a well shaped loaf.

The Manipulation Factor. In these experiments doughs were mixed and divided into loaves of equal weight, all being controlled exactly alike, except for the time or manner of kneading.

Loaves that were given no kneading at all, but were merely cut down to let out the gas, gave equally good flavor, and a higher degree of elasticity; but kneading made the crumb whiter and more silky, the vesiculation somewhat finer, and the distribution of gas more even. This even distribution of gas also tended to make a better shaped loaf.

Increased time of kneading, after the dough had become smooth and satiny, or after 15 or 20 minutes, added considerably to the whiteness, and somewhat to the fineness of texture. The improvement however seemed by no means in proportion to the increase in labor.

When the flour was worked in very gradually with thorough kneading, the dough felt much stiffer for the same amount of flour, than when mixed rapidly and kneaded carelessly. This seemed to be due to the fact that in the more thoroughly worked doughs the flour absorbed the liquid more completely, and there was less free moisture.

More difference was observed in texture due to manner of kneading than to the time of kneading. A kneading stroke which was long and firm and even, covering all portions of the dough alike, and a rather quick stroke so that the dough was kept constantly in motion seemed to be the most effective sort.

The method of molding into the loaf had also considerable effect on texture; the loaves that were not kneaded, but were molded lightly at this point, showed more plainly the effects of handling in the early stages. In all cases the formation of a compact dough, on molding

into the loaf, resulted in a loaf of small volume and dull crust, but of fine and even texture; the loaf was, however, too compact, and lacked lightness and silkiness. The loaves which were lightly molded, without kneading, were superior in all points except in fineness and evenness of texture.

The Temperature Factor. In order to determine how great was the effect upon the bread produced by the temperature of rising, doughs were raised at various temperatures. The results were as follows:

Overheating of the dough during rising results in a loaf of small volume, coarse texture, dark crumb, and dull, unattractive crust.

Chilling of bread tends to lessen its volume, and to produce compactness, coarseness, and toughness of crumb.

There is very little difference in the short process breads raised at the temperatures of 26° and 40°C. Such difference is not enough to justify the additional length of time demanded by the lower temperature.

Doughs which are thoroughly warmed during mixing and kneading are not easily chilled afterward. The later it is in the process when such chilling occurs, the less the influence on the bread. This was tested both by putting the dough into the icebox and by putting it into an open window on a winter day where the temperature registered 12°C. In such cases fermentation was well started, and the dough continued to rise steadily, although somewhat slowly, and made bread which showed no characteristics of chilling.

Variations were also made in the temperatures of baking. It was easily seen that the baking temperature must be regulated according to the degree of lightness of the dough. Too hot an oven causes an under-raised dough to crack after crusting over, thus producing holes in the crumb, while too cool an oven allows fairly well risen dough to become overlight.

Further proof of the statement already made was shown by experiment. Bread allowed to rise to the desired degree of lightness before baking, and put into a hot oven produces a better shaped loaf than if allowed to finish its rising in the oven. However, the bread which is barely doubled in bulk and allowed to rise in the oven reaches the same maximum volume attained by bread risen entirely outside, and in addition is of much finer texture, better color, and increased tenderness and silkiness. As high a temperature as 240°C. continued for as long a time as 15 minutes produces a hard, tough crust and loss of brightness, while a lower temperature maintained

throughout baking, with a rise to 235°C. for a few minutes only, produces a tender and crisp crust, with a bright bloom. The most satisfactory baking temperature for loaves risen till doubled in bulk in the pans is as follows: 180°C. for 10 minutes, 180°–235° rising gradually during the next 15 minutes, and 218° for the last 20 minutes.

The retention of moisture during baking, as in a covered pan or, under some conditions, in a fireless cooker increases the volume and weight of the loaf, but makes the crumb overmoist. The volume is increased because the presence of steam prevents the crusting over of the loaf, thus allowing it to rise more.

The effect of baking upon bacteria in bread was also studied, and in this connection considerable experimental work was done on the subject of "rope." The characteristics of ropiness in bread are these: a day or so after baking, a disagreeable odor develops, the crumb becomes moist and sticky and finally stringy. Brown patches begin to develop throughout the loaf, and finally the entire inside of the loaf becomes a sticky brown mass, somewhat resembling a rotten apple. In order to determine the cause of ropiness, microscopic examinations and plate cultures were made of the infected material, the bacilli present being carefully studied, and sterile bread sticks being inoculated.

As a result, ropiness in bread was seen to be caused by a motile, rod-shaped bacillus which, in some cases at least, and probably in most cases, is found in the flour. The rope producing bacillus withstands baking temperatures, but the bread made from infected flour may be prevented from developing rope by being kept dry and cool after baking. Underbaking and an increase of concentration of the bacilli in the flour, produce an increased rapidity of development.

In order to see if there was any practical application of the fact, discovered by Watkins,[2] that lactic acid was destructive to rope producing bacilli, flour was inoculated with the bacillus and used in making breads, various attempts being made to retard the growth of the bacillus. Sunning and drying of the flour seemed to have no effect, neither did hop-water. In some cases, buttermilk, used as the liquid for mixing bread, entirely prevented the development, even when the bread was kept in a moist, warm place. The amount of buttermilk used, however, must be in proportion to the degree of infection of the flour. It is possible to have a flour so strongly in-

[2] *Jour. Soc. Chem. Indus.*, xxv, 1906, pp. 350.

fected that the exclusive use of buttermilk will not prevent the growth of rope. Breads made from exceedingly stiff doughs are somewhat slower in developing rope than those made from soft doughs. The appearance of a pink crumb, caused by a certain variety of coccus often accompanies ropiness.

One practical outcome of this piece of investigation was the making of a score card for use in judging bread. Like all score cards this needs to be perfected by use and is now being tested with this end in view.

A PIONEER COOKING SCHOOL

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Eighteen years ago, several years before the first Lake Placid conference, a little school of Domestic Science was started at Mineville, New York. This little town at the edge of the Adirondacks thus has the distinction of having had the first cooking school in New York State, north of Albany. The school was founded by Mrs. Frank S. Witherbee, of New York, and is called Witherbee Cooking School.

At first there were only a few pupils, all of American birth, in the school, but as the town has been growing and changing, so the school has been growing and changing until now it has an enrollment of over eighty. There are now in the school Poles, Hungarians, Italians, French Canadians, Scotch, Irish, and Americans. Here these races meet and learn to work together for the common good.

Shortly after the school was started Miss Anna Barrows, of Boston, came to inspect it. She stayed several days and gave one of her demonstration lectures which aroused great interest. On her way to the first of the Lake Placid conferences Miss Emily Huntington, founder of the Kitchen Garden Movement, stopped to see the school in 1899. Both Miss Barrows and Miss Huntington expressed approval of its work and methods which have continued practically unchanged to the present, except as the school has grown and as the home economics idea has itself more completely developed.

The school is held in a large room in the Workingmen's Club House. This room has been fitted up by Mrs. Witherbee with everything necessary to carry on the work. The kitchen equipment has been lim-

ited to such appliances and utensils as the pupils can afford to have in their own homes, and these the pupils are taught to use in the best ways possible. The dining room furnishings are more elaborate. There are fine china, dainty linen, and silver, and the children are taught to use these things as they should be used. When it is known that the parents of many of these children are European peasant folk who have been in this country only a few years, the value of such teaching is realized.

For several years there were classes for boys as well as girls but since the classes have grown so large the boys have had to give way. They are remembered as having done excellent and careful work.

At Christmas time, every year, the school sends out boxes of jellies and marmalade (made by the pupils) to the Nursery and Child's Hospital in New York and to Stony Wold Sanatarium in Franklin County, New York. The pupils are thus brought to feel that they are doing some good in the large outside world.

The classes meet once a week, after school. Attendance is purely voluntary and the classes are always over-crowded. Mrs. Witherbee pays all the expenses and no charge of any kind is made for the instruction.

While in the outside world the question as to whether or not the girls should be taught in school to cook has been agitated and discussed pro and con, this little school has been running year after year with ever-increasing classes and spreading its influence for good over a wide territory. Today the first scholars are sending their daughters that they may enjoy the benefits which the mothers have found so lasting.

There has been only one teacher in all these years, Mrs. Sarah Webster Saville. Mrs. Saville studied in Pratt Institute and in the various charity schools in New York City before the Witherbee Cooking School was opened. The class of scholars in Mineville was so different from those in the city that an entirely different method of teaching had to be worked out. That this method was good is shown by the results in the lives of the scholars.

THE BASIC WORK IN PURE SCIENCE IN PREPARING TEACHERS OF HOME ECONOMICS[1]

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"The fundamental requirement for progress in applying science is the acquisition of science to apply."

These words of one of the most inspired leaders of the Home Economics movement in America (the late Mrs. Ellen H. Richards) apply broadly to the human race as a whole, and in this sense plead eloquently for the encouragement of scientific research of all kinds, however abstruse and remote from obvious application. As related specifically to Home Economics they call for research in problems whose application to household practice is apparent; and how numerous such problems are every intelligent teacher of Home Economics must be painfully conscious.

But it is with the application of our quotation to the training of teachers of household science that we are at this moment more particularly concerned. Committees of the American Home Economics Association and the Association of American Agricultural Colleges and Experiment Stations have agreed upon the following definition of Home Economics: "Home Economics, as a distinctive subject of instruction, is the study of the economic, sanitary, and esthetic aspects of food, clothing, and shelter as connected with their selection, preparation, and use by the family in the home or by other groups of people." In accordance with the terms of this definition a teacher of Home Economics requires adequate training in the elements of economics, in the principles of art, and in those natural sciences which are related to the economic and sanitary aspects of food, clothing, and shelter.

The natural sciences which have obvious application to the problems of the household are physics, chemistry, and biology. In the field of each of these sciences there are certain topics whose bearing upon household work is self evident, and certain others which, although they may eventually prove of greater importance, are in the present

[1] Presented at the Sixth Annual Meeting of the American Home Economics Association, Ithaca, 1913.

state of our knowledge so inapplicable to household problems that it would be folly to attempt to impose the study of them upon young women whose time is so fully employed in the acquirement of practical knowledge. In the field of physics, for instance, the laws of heat distribution—of radiation, conduction, and convection—are obviously of such great interest in relation to the household that every housekeeper will be profited by a study of them, and every teacher of household science should master them thoroughly. A knowledge of the laws of electro-magnetic induction, on the other hand, is by no means essential to the housekeeper. From a cultural standpoint it is well that she should realize her debt to Michael Faraday for the discovery of these laws and to the local electrical engineer for the intelligent application of them which results in the efficient and sanitary lighting of her home and in the saving of manual labor of the household; but she herself has little occasion to employ these laws. Similarly, although the use of the metal tungsten in incandescent electric lights effects a material economy in the lighting of the house, and although it is of practical importance that she should know that cold tungsten is more brittle than hot, so that she may be wise enough to turn on the current before attempting to clean the globes and although sodium tungstate may be useful for rendering fabrics fire-proof, yet one would scarcely recommend her to devote her attention to the study of the element tungsten to the neglect of sodium, calcium, carbon, oxygen, or nitrogen.

The content of courses in the pure sciences for students preparing to teach Home Economics must necessarily be influenced by the preliminary education of the students, the duration of the Home Economics course, and the local conditions of the institution in which the course is given. It is a common policy in large institutions to make one course in elementary physics or chemistry serve for students of several different schools. Home Economics students may have to acquire the elements of the sciences side by side with students of pure science, of agriculture, of engineering and of medicine. Admitting the economy of such a system we yet maintain that the student of any one of these schools will be better served by a course prepared specifically for that school. The active interest of the student is essential to the satisfactory acquirement of any branch of knowledge. Students of applied science are, I think, especially disposed to lose interest in any subject the direct practical application of which they do not see. To such students the scientific principle must be presented with the practical application in constant view, or at any rate in frequent view. This

may, and usually will, imply the omission of some topics which would receive attention in a general cultural course, or in a course for students of another line of applied science. But it need not and should not involve any attempt to popularize the science by slurring over difficult points. The aim should ever be to instil into the mind of the student that scientific habit of mind which "proves all things and holds fast that which is good," and yet is always ready to question the advantage of established practice and to search for improvements upon even the oldest and most approved manners and customs. To instil this progressive spirit, this "habit of blessed discontent," is of even more importance than to impart useful information.

If possible, laboratory practice should be given in each science studied and the laboratory work should be so conducted as to demand of the student careful observation and independent deduction from the observations. The directions for the laboratory work should be so worded as to induce the student to make the essential observations, and such questions should be asked as will lead her to the desired deduction. But every tendency to note down what ought to have happened instead of what was really observed should be sternly suppressed. If what ought to have happened has not happened the student should be required to repeat the work with more care.

In the domain of physics, the most important topics are no doubt those relating to heat. A comprehensive knowledge of this department of physics is essential to the intelligent discussion not only of the economy of house-heating, but also of ventilation, cooking, and laundry work. Mechanics is possibly the next most important division of the subject. The advantages of labor-saving machines should be so brought home to the housekeeper that she may be capable not only of intelligently appraising the value of the various household appliances that may afterward be brought to her attention, but also of so planning her own work as to eliminate all unnecessary expenditure of effort. Even the height of a kitchen table may make a tremendous difference in the ease and comfort with which housework may be accomplished. Something of the theory of light, particularly with reference to reflection and refraction will be useful in relation to the study of household art. Some knowledge of the laws of electricity is essential to the safe and economic use of this form of energy in the home. The transmission of sound has some application to house architecture. And the great laws of energy, which bind together all

the departments of physics, cannot be left out of consideration. A broad course in general physics, supplemented by a more detailed study of heat and, if possible, of mechanics and certain aspects of electricity would appear to be well suited to our purpose.

In chemistry the course should be so shaped as to arrive without unnecessary delay at the applications to the laundry tub and the dinner table. In teaching chemistry to a class taking a course of a single year, and consequently limited to a weekly lesson of two hours, why not omit the detailed study of the elements, and after introducing the fundamental conceptions of the science, proceed through the characteristics of acids, bases, and salts, directly to the discussion of hard water and soaps? Ammonia and its salts serve to introduce the conception of radicals and so to prepare the mind for the ideas of organic chemistry. The discussion of alcohols and esters brings us at once to the fats. The conception of hydrolysis, introduced in connection with the salts of acid and alkaline reaction finds further application in connection with saponification and with the digestion of fats. Carbohydrates and proteins are then taken up and their hydrolysis studied so as to show the interrelations of the various members of each class, and to account for the changes they undergo during digestion. The chemistry of combustion, of foods, textiles, soaps, dyes, and bleaching agents is of great importance to the housekeeper, but just how fully each can be treated must depend upon the time which it is possible or advisable to devote to this branch of science. Students preparing to teach ought, of course, to have more than one year's instruction in chemistry. Three or four years are desirable; in this time it is possible for them to get a thorough grounding in the theory of the subject, and also to devote considerable attention to the topics specially related to housekeeping.

In biology, just as in chemistry and physics, some general knowledge of the science is necessary as a foundation for the study of its branches which are of supreme importance to the homemaker. These branches are microbiology and human physiology. Some knowledge of botany and of zoölogy, of the structure and physiology of plants and animals may be used by way of introduction and is essential to a satisfactory knowledge of foods and textiles. But by far the most useful knowledge for those who are to have charge of homes and children is the knowledge of human physiology and of the relation of microörganisms to the preparation and preservation of food and to the dissemination of disease.

"To teach women, girls, prospective mothers to war on invisible dirt," says Dr. H. W. Hill of the Minnesota State Board of Health, "is one of the functions of bacteriology. . . . . Women must learn to break up, divert, stop in some manner—in every manner—the exchange of normal discharges among children at school and amid families at home, if infectious diseases are to be abolished or abated. The needful information, beliefs, technique, and habits cannot be had or established except by studying the basic principles of bacteriology."

This does not imply that the student or even the teacher of Home Economics need become an expert in the isolation and identification of microörganisms. Even without the use of a microscope it is possible to make convincing demonstrations of the existence of microörganisms in dust, in water, in milk, and in other foods, on the feet of flies, and on human hands, hair, teeth, etc.; to teach the student to discriminate between yeasts, moulds, and bacteria; and to familiarize her with the relation of each to the welfare of the human race. Students preparing to teach should learn to perform effectual sterilization and to prepare the culture media for the demonstrations to which we have just referred, so that they themselves may be able to make such demonstrations. All Home Economics students should have practice in disinfecting rooms, textiles, etc., but this practice can only be intelligent when supported upon a foundation of sound theory.

In the domain of human physiology I will not venture to prescribe the omission of any topic. Almost anything in this science is potentially useful to the homemaker. The nutritional functions and the physiology of childhood and growth should be the central topics of the course, but these cannot be intelligently discussed without constant reference to other functions. The course must also have as a foundation some study of anatomy.

Whenever possible the instruction in each science should be given by a specialist in that science, but the specialist should bear constantly in mind that the object of the course is to train teachers of Home Economics and not to train specialists in his own science.

THE BASIC WORK IN ART IN PREPARING TEACHERS OF HOME ECONOMICS[1]

MARY J. QUINN

Pratt Institute

The purpose of any technical education must determine the course of study. In a school of Home Economics the art training does not attempt primarily to develop technical skill in any of the fine arts, but is directed toward developing the power and pleasure of exercising artistic discrimination in bringing order and beauty into the home and domestic environment. In order to approach intelligently the wide field of special arts which are related to the home, it is necessary to lay a foundation on an analysis and knowledge of the fundamental principles underlying all art. To be able to recognize and discriminate balance, rhythm, and harmony of proportion, line, and color; to be able to judge these when transfused by the inspiration and individuality of the artist and created into the ultimate beauty of a splendid building, a fine picture, a chair, a beautiful rug or tapestry is to have acquired an understanding of the science of art and of the principles which underlie the arts, crafts, and industries related to the home.

To understand the principles of design, one must exercise them in concrete problems. To know, it is necessary to do; and although doing does not necessarily beget knowledge, technical practice is necessary for sound judgment in artistic distinctions. The principles of design should be developed in clear, logical sequence. The problems should include study of proportions, balance, rythms, unity of form and movement, incoherent repetitions, radiations, and other arrangements of line and mass forms. With each problem it is well to try rearrangements, to strengthen, refine, vary emphases, shift dominations and subordinations, and elaborate detail continually—comparing and analysing each rearrangement—in order to develop understanding and facility for more complex and subtle problems. In a study of color, attention should be directed toward the physical and psychological, as well as the artistic relations, correlating, whenever possible, the work in color study with the work in physics and psychology. In the artistic relations of color after analysing and comparing hue, intensity and values, theories of color harmony dependent on these qualities

[1]Presented at the Sixth Annual Meeting of the American Home Economics Association, Ithaca, 1913.

and on proportions of color in combination should be presented. In illustration of these the students may make color combinations to show the effect of different colors in juxtaposition and varying proportions, and in combination with black and white. Effects of daylight and artificial light on color combinations is an important and interesting consideration.

As far as is practical, these exercises in color and design should be carried out with materials, and in a technique which is of use to the homemaker and of introductory significance to the more specialized work of the course. For instance, an early lesson in the course may be the making of a portfolio to hold drawings and illustrative material. This lesson involves consideration of texture in paper, computing and measuring, and the technique of simple pasting; and it introduces some of the processes of bookbinding. In the study of color, the problems may be carried out through dyeing. An average student will learn more about color with one experiment of dyeing materials for color combinations than with a half dozen color arrangements worked out in water colors on paper. Knowledge of dyes and dyeing processes relieve the homemaker and the teacher from dependence on the crude and limited range of colors available in inexpensive materials. The stencil and the woodblock offer opportunities for different methods in the use of dyestuffs, while the beautiful and useful variations offered in needlework for both color and design are almost unlimited. The surface treatment of woods and the use of varnishes and stains may be carried even to a lacquer finish in the application of designs to boxes, trays or furniture. This treatment involves a technique peculiarly valuable to the homemaker.

The course in design should build the knowledge on which to base the study of the special arts related to the home. With these special arts a new element enters. The preceding work concerned itself with surface decoration, with problems of proportion, of rythm, of color, in designs of two dimensions. To be sure, there was an emphasis laid on the relation of the design to the form of the space to be decorated—the emphasis of structural form by design; but now we deal with structural designs of three dimensions, architecture, furniture design, metal work, porcelains, and pottery, with emphasis on fitness of form to utility, and limitation of decoration to structural reinforcement. Students should be familiar with the essentials of structural form in each great epoch in architecture, and of the best types of modern and local domestic architecture. In following the evolution of structural form in architecture, they should note the changes due to climate, location, accessibility

of material, and adaptation to manner of living and use of building. Each student should try to plan a house. Preceding this and in preparation for it, consider all the problems which beset the builder—the cost of the house, size of plot, street line, sun exposure, accessibility of materials and labor, and limitations and advantages in country, suburban, and city building. Compare materials with reference to cost, utility, and type and permanence of architecture—advantages and disadvantages of wood, brick, concrete, and stucco. Illustrate methods of construction in each material. Consider in detail the constructing of a house—the foundation, cellar, walls, floors, roof, windows, doors, chimneys, stairs, plumbing, lighting, and heating; and supplement the lectures with illustrative models and with field trips to houses in process of construction. With this antecedent preparation the student should plan a house of simple structural form, including stairways, halls, two chimneys, living room, dining room, butler's pantry, kitchen, bedrooms, bath, ample closets, light, ventilation, circulation, and plumbing, lighting, and heating arrangements. As the work is given for consideration and knowledge of essentials in good domestic architecture, and not for training architectural specialists, it is not necessary to carry these plans further than accurate and readable pencil plans. Time should not be taken for acquiring the finer technique of architectural rendering. Based on the attention given to types and forms of windows and door constructions and the importance of good proportions, it is well for the student to draw a front and side elevation to show the spacing and designs of doors, windows, roof, and chimney in the elevation view.

The interior furnishing involves new consideration. By means of lectures, illustrations, and visits to museums and antique shops, study the development of structural design in furniture. Trace the changes and variations in structural form, in woods used, in upholstery materials, and in craftsmanship through transition from period to period down to furniture made today. Discuss the fitness and availability of materials for houses of moderate cost, and simple manner of living. Develop the history and consider textile design in connection with furniture, and relate, wherever possible, the development of the other artistic industries. Have the students visit shops and museums and gather photographs, illustrations and drawings of furniture, and samples of wall papers, curtain and upholstery materials for the house already planned. Draw floor plans and arrange and rearrange the furniture drawn to scale. From the collections of wall paper, curtain and upholstery materials select combinations for use according to limi-

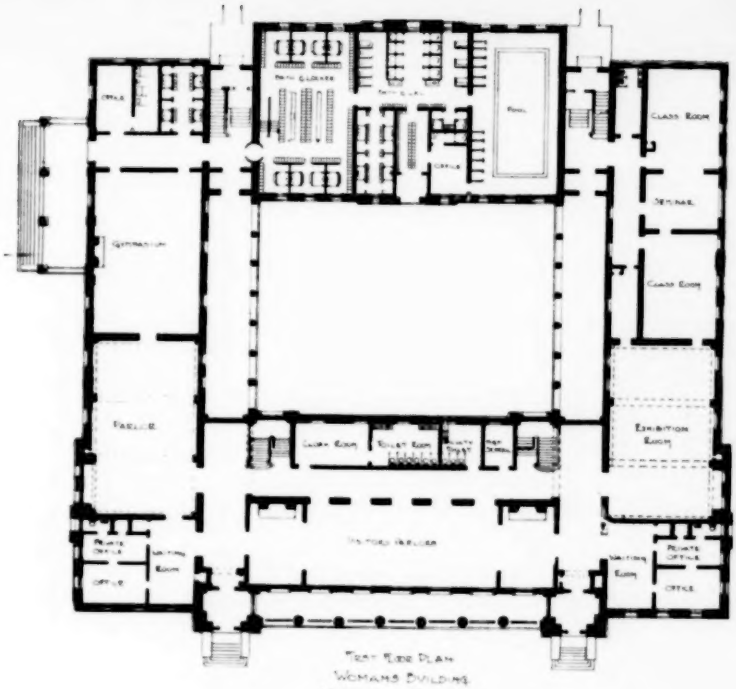
tations and possibilities of each room, and in the proportions of their use in furnishing.

Lectures on rugs, supplemented by a visit to shop or museum; on porcelains and pottery, supplemented by a visit to museum; on processes of picture making, supplemented by photograph, etching, mezzotint, lithograph, engraving, color printing, water color, tempera and oil painting should be given with discrimination and adequate illustration.

Such courses as have been suggested offer opportunities for broad educational values in imaginative stimulus and mental enrichment, as well as technical knowledge, through the development of the subject matter in the dual aspect of its relation to immediate problems of the home, and its relation to the history of art and architecture. The intelligent use of illustrative material will open the doors of China and Persia, of Byzantium and the Renaissance, of English charm and French skill, and play fair substitute for the education acquired by intelligent travel. The problem of spacing and line movement in a border design may be developed by stimulation from the perfection of border on a Greek vase, from the embroideries of a Fra Angelico angel, or from the primitive vigor of an American Indian basket. Color combinations may be evolved with the help and understanding of rich Persian color, of the intellectual clarity of Chinese color, of the vibratory arrangements of the French impressionist colorists. Many points of special interest come up through the individual problems, and students should be encouraged to make special and general collections of illustrative material relating to architecture and house furnishing. Too much emphasis cannot be placed on the value of association and the study of beautiful illustrations and museum collections.

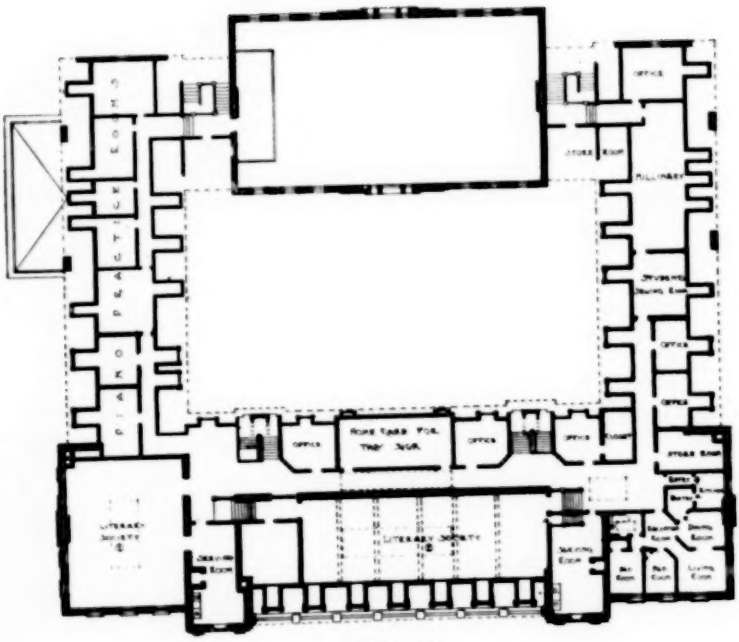
The museums in our larger cities are of invaluable service; and the growing interest in the establishment of art museums in the smaller cities, and in the acquisition of collections of textiles, laces, furniture and art objects bears promise of enrichment for the fields of household art. If we could help museum directors and owners of art collections to realize our need and their opportunity, there might be developed in this country the extension work in museum collections which has been so well administered in France and England. South Kensington Museum in London, and the state museums of France share their treasures with the smaller cities of provincial districts through travelling loan collections to art and technical schools, libraries and art museums.

As the ultimate permanence and joy of any piece of work is a measure of its beauty and its art, must we not help to bring this leaven into the industrial and commercial forces of today?



First Floor Plan
Womans Building
University of Illinois
Scale 1/16"

Second Floor Plan
Womans Building
University of Illinois
Scale 1/16"



THIRD FLOOR PLAN
WOMANS BUILDING
UNIVERSITY OF ILLINOIS
SCALE 1/8"

THE WOMAN'S BUILDING, UNIVERSITY OF ILLINOIS

ISABEL BEVIER

The frontispiece shows the north and east sides of the present Woman's Building at the University of Illinois. The original building was opened in 1905; the new addition was made in 1912. In the original plan, three main lines of work were represented, viz: Home Economics in the north wing; the woman's gymnasium in the central part; the rooms for rest, recreation and the social activities of the young women in the south wing. As will be seen by the preceding cuts of plans, the present building has the same general arrangement, except that the Household Science Department has increased its equipment by the large dining room which occupies the front of the building on the second floor.

This room is 75 feet long and 25 feet wide, and has been equipped as a cafeteria. The color scheme is terra cotta for walls and mahogany for chairs, tables and doors. In connection with this are adequate service and storage rooms, and a well-equipped institutional kitchen.

There is a growing recognition of the need of studying the art of right living, both for the individual and for the community, and also some slight appreciation of the fact that much of the misery of the world is due to food, badly cooked and unattractively served. Most institutions of learning are seeking to provide not only academic training, but also healthful living conditions for their students. It is hoped that this new cafeteria may do its share in helping on this good work, and, at the same time, serve as a laboratory for those seeking instruction in lunch-room management and the preparation of food in large quantities. Each year the call is stronger for the trained woman who can help to solve some of the problems of institutional management and community life.

Near to the institutional kitchen are the diet kitchen and the class room where, by lecture and practice, the principles of rational diet are taught and a foundation laid for the work of the practical dietitian, which is supplemented later by actual practice in the local hospital. Just beyond these is the electric kitchen, where the student has an opportunity to become familiar with an expensive but most attractive form of fuel.

On the third floor, one finds more adequate provision than has hitherto been possible for the study of some of the problems of the

home. The care of the sick in the home is a subject of no small importance. The services of a trained nurse are frequently impossible to the country dweller, and often a luxury not to be afforded in either town or country. Moreover, a little knowledge of emergencies and of the principles of nursing often make the presence of a nurse unnecessary. If the woman in the home understands the proper care of wounds, cases of blood poisoning may be prevented. Provision for instruction and practice in the care of the patient with the appliances that have been found worth while in actual practice, are to be installed in a room devoted to the principles and practices of the home care of the sick. In these days when the interest in public health is so keen, the Department can contribute some training of its students along this line and so help to better living conditions. No one can estimate how much harm is done by those individuals who are ignorant of the simplest laws of public health and who, for that reason, are a real menace to the health of a whole community.

In contrast with the cafeteria on the second floor, which stands in a certain sense for the study of the problems of community life, one finds on the third floor an apartment designed to give individual practice in the problems of the home. A school kitchen and a home kitchen are of necessity very different places if either is a good type in its own field of work. The two have certain principles in common which may be illustrated by quite different practice because conditions are so different.

This five-room apartment is designed to serve as a laboratory for the study of the problem of the household along many different lines. Its plan and equipment, its color schemes, furniture and furnishings, serve as concrete illustrations of art and economics applied to this particular place. Moreover, it can serve as a place for the practice of the principles of home management to students who wish to specialize along these lines.

None of the rooms are large, but they are the usual rooms to be found in a small apartment. The place is not designed as a show place, as a "model flat," for the instruction of the general public in good housekeeping, but rather as a place where, under some of the limitations of a modern apartment, students can find and exemplify according to their ability, the problems connected with the cost of food and care of the house.

While provision is thus made for the newer occupations of women,

such as the dietitian, the manager of the lunch room, and the social worker, better facilities are thus afforded for the student who wishes to study the problems of the school or of the home. The department of course provides an excellent laboratory for the study of the activities of the home.

So much has been said thus far about the extensions and additions on the scientific and economic sides that one might receive the impression that the art side has been neglected. That impression is changed as one walks through the new building and observes the two large rooms on the second floor, equipped for sewing, costume design, and weaving, and the spacious laboratory of applied science where provision is made for the study of the chemistry of textiles, as well as the problems of nutrition.

The new building, therefore, means enlargement of the resources of the department not only in the old and accepted lines of work, but also in the distinct addition of some of the newer phases of the world's work.

COLLEGE EXTENSION IN DOMESTIC SCIENCE

ROBERT WOODS

South End House, Boston

Two years ago a group of experienced settlement executives came together in an unusually solemn session. They had reached the conclusion that something must be done to make their classes in cooking and other household subjects more serviceable and more vital. It was felt that the situation as a whole required careful experimental study and that a higher grade of instruction, which should become systematized and standardized for all the settlements, was a necessity.

With this sense of a deep, unfulfilled need so far as their field of service was concerned, the settlement workers had the conviction that they had a very real opportunity to offer. They realized, of course, the great call of the public school system for teachers of domestic science; but because of that fact they held that the range of experimental training which the settlements could afford to advanced students under competent direction was of the very greatest value. In addition, it seemed to them that the very difficulties of settlement teaching—its lack of formal school sanctions, its necessary adaptation to humble

standards and peculiar traditions, and its complex relations with a scheme of neighborhood betterment—constituted it a rare field for the training of those who should aspire to the higher posts in pioneering and administrative work for the public school system in the future.

These considerations were laid before the authorities of Simmons College, some of whose undergraduates had for a number of years given assistance at different settlements. The College in reply proposed that under a competent supervisor a definite system be organized through which the classes in cooking and other household pursuits should be conducted by its advanced students. The supervisor was to be, on the one hand, an officer of the college, and on the other hand, an official member of the staff of such houses as might enter into the plan. Twelve settlements entered enthusiastically into this project; and work under it was begun in October 1911, with Miss Marie Lundberg, of Simmons College, in charge.

For the first year Miss Lundberg, somewhat after the fashion of the country school-teacher, boarded around at the different settlements in order to become acquainted with the neighborhood problems in the different districts of the city. This year she is residing continuously at the South End House. Working under her direction in thirteen different settlement houses, are twenty-five seniors and fifteen special students, with thirty-five juniors assisting and preparing for more responsible work next year. The work of all these students at the settlements is considered as an integral part of a course in normal training in which they are entered at the College. Each student teaches one class per week. In preparation for each lesson she makes out her own outline and lesson plan to meet the needs of her class. Frequent conferences are held with the students. One period per week the students come together for discussions and criticisms with the supervisor. The seniors taking this course are required to take a course in education with Miss Arnold. In discussions to bring out the essential principles of teaching, the practical experience of the students in the settlement classes furnishes illustrations.

A course of study for the students has been made to aid them in grading the work done by the children. A graded scheme of cooking lessons for three years' work has seemed advisable in order to prevent a needless repetition of lessons. Every effort is made to open the eyes of the student-teachers to the telling points in the particular kind of class work which they are undertaking.

The settlement classes are made up mostly of children under four-

teen. It is hoped that the steady continuance of this system will make it possible to retain the interest of girls in domestic matters, during the baffling years from fourteen to eighteen, with a scheme of instruction which can presuppose elementary housework and will extend to a greater variety of interests involving new ways of applying the imagination. A certain number of young women are reached, particularly those who are engaged to be married, and also some married women.

An increasing effort is made to follow up the instruction in the homes of the children—to see that the lessons are applied, to secure the coöperation of the mother, to gain educational results with the mother herself, and to learn in the most practical way how to adapt class instruction to meager home facilities.

The equipment for classes varies at the different houses. In some there is provision for group work, in others only for individual work. The utensils are in most cases similar to those in use in the homes and are pretty generally limited to the essential ones which should be used and can be procured by even the poorest families.

Thus the students are really participating in the settlement method of attack upon neighborhood problems, and their constant association with settlement workers opens up to them many new ways of personal influence over their pupils and of reaching conditioning factors in the background. Some members of the teaching corps are making special studies of the Jewish, Italian, and other immigrant dietaries. From time to time, more or less formal conferences are held between members of the corps and settlement executives for the sake of a clearer and fuller understanding of settlement methods and motives.

The breadth and actuality of this training, together with the experience in leadership of assistants which the senior students are having, certainly constitute an opportunity similar to that which young physicians and medical students find so essential through their graded hospital appointments. The juniors who have had a year of training in a subordinate position under the system will be able both to give and to get more than those who have not had their preliminary opportunity. After this year it is expected that every teacher in charge will have had a year's practice as assistant. As a whole, the plan gives abundant promise of realizing the hopes held out in the beginning that this system would send out women who could and would assume initiating responsibilities in the ever growing service of domestic science education.

AN EXPERIMENT IN TEACHING ECONOMICS

SARAH J. MCLEOD

Pratt Institute

Our work in economics really begins with the junior students in household administration. Our course differs very little from other courses in administration. We take up as thoroughly as possible in the time at our disposal the division of income and the division of labor in the household, and systems of household accounts. This course was placed in the first term of the first year. Our students have begun to keep personal accounts under our supervision in a prescribed form of classified account books. As this is the first year of this experiment, our data are incomplete. When we have an account of the expenses for one year of every senior household science and arts student, we expect to be able to make some interesting studies of the expenses of the Pratt Institute household science and arts student. The personal expense account ought to be of great value to the household science student. Our experience has been that the average nineteen-year-old girl has, in most cases, very little idea of how she spends her money. She knows, perhaps, what her monthly allowance is and in most cases she knows that she spends all of it, but she does not know how and where her income goes. Account-keeping has always been to her an irksome task but under instruction the girl becomes so much interested in watching her expenditures that her account book is not a wholly dismal affair.

One period of class work a week and two hours for preparation have been allowed for this course in economics, and it is required of all senior household science students. We use no textbook. In the class period a concise lecture is given, really an outline of the work for the following week, and then each student chooses from a list of references those she wishes to read. In this way she becomes acquainted with economics literature and it seems to us that one object of so short a course should be to acquaint the student with as many good authorities on economics and sociology as possible so that she may know where to gain further information. Any course in economics can be only a starting point.

During the first two terms we deal with economic theory beginning with definitions. It is surprising how few students know anything

about the original meaning of economic terms and how these meanings have changed. We then take up the evolution of industrial society, beginning with the family and following the development through the handicraft, domestic, and factory systems, and as students of household science we watch closely the influence on the position of women. The next subjects considered are the production and consumption of wealth; then follows the distribution of wealth. Banking and monetary history are touched upon in a very limited way.

Our third term is given to a survey of practical sociology. We begin by trying to bridge the gap between the work in economics and sociology. We study the causes of poverty, take up the different relief measures, and the study of constructive and preventive philanthropy. The first subject is housing: we try to get an understanding of present conditions and their improvement over older conditions; then we consider proposed housing reform. The next subject is the study of the child in relation to his home environment, and the effect upon the welfare of the child of the following movements: play ground, recreation center, public bath, the introduction of household science and arts and manual training into the schools, medical inspection in schools, and school nursing. Then follow the problem of child labor, the question of social insurance and the effect of each upon the other; then naturally follows the study of the woman in industry, her wages and the conditions under which she works. We study as far as possible from published statistics her division of income and how she might divide her income more advantageously if she saw things in a truer relationship. It is surprising to see what keen interest is shown in this subject and to note the effect that household science and art courses would have upon the present use and division of income. In this short course we can give to our students only a slight acquaintance with economic and social questions but their interest proves that they will continue their studies and apply the knowledge gained.

CLUB WORK IN HOME ECONOMICS: FEDERAL AND STATE CONTROL OF FOOD

HELEN LOUISE JOHNSON

During the last few months we have had the privilege of conferring with the Secretary of Agriculture and others concerning the food work which the Home Economics Committee of the Federation of Women's Clubs has undertaken in coöperation with the Public Health and Legislative Departments. The necessity for uniformity in the matter of food legislation is being discussed throughout the country. It furnished the subject matter for an entire session at the last meeting of the American Public Health Association in Colorado Springs where Dr. Lederle of New York City said: "The aroused nation-wide public sentiment which led to the enactment of the Federal Pure Food Law resulted in enormous benefit to the public." He said further that to enforce and improve it, "there is pressing need for continuous and practical coöperation among official agencies, federal, state and municipal, and this coöperation should have for its first object the adoption of uniform food laws, definitions, rules and regulations and, as far as possible, uniform methods of enforcement."

Plans have already been formulated by the Secretary of Agriculture for certain reorganizations in the Bureau of Chemistry looking toward a more effective administration of the Food and Drug Act, and toward greater constructive technological assistance to manufacturers to help them to avoid waste, reduce cost of manufacture, and to develop pure products which will comply with the law. A definite effort is to be put forth to make this act more of a hygienic measure through increased attention to milk, eggs, oysters, and fish, some of the foods which are subject to organic contamination and may become carriers of disease. We can hope that similar hygienic measures will be forthcoming for regulating the handling, marketing and sale of vegetables, fruits and other foods which may also become contaminated and convey filth and disease if conditions surrounding them are not good.

The housekeeper has not fully understood the limitations of the Federal Food Law nor the discrepancies between state laws which cause great confusion and affect the cost of production, distribution and sale. When the laws regarding labeling mean that a package of cereal to be sent throughout the country must be labeled in at least

five different ways, there is not only a loss in the actual value of the label, but an undue increase in the cost of the package.

One of the things which the buyers of food very often do not realize is that the federal statute applies only in the District of Columbia and in interstate commerce. State autonomy is one of the inherent rights granted by our constitution. The individual state is responsible for the health and well being within the state.

At the annual conference of Commissioners on Uniform State Laws held in Montreal in August last, the Committee on Purity of Articles of Commerce was directed to "institute such inquiries into the food and drug laws of the various states as shall determine in what respects they are incongruous and inconsistent with the National Food and Drugs Act and to report to the Conference such recommendations as in the judgment of the Committee will harmonize such laws and further the promotion of complete harmony of food and drug laws throughout the United States."

At a meeting of this committee on Purity of Articles of Commerce held in New York City, in November, one entire day was given over to expounding the troubles of manufacturers in trying to comply with varying state laws and the difficulties experienced by Government inspectors and others in the service. Our representative was forced to ask if the laws had been designedly devised to give employment to lawyers, for there seemed no other good excuse for such discrepancies and trouble. The Secretary of Agriculture has requested that authority be granted to prepare and submit such amendments to the Food and Drug Act as may be deemed needful to safeguard the health of the people, to establish standards, better define drugs, improve the food supply and promote uniformity in the matter of food legislation. The work that our committee has undertaken is, then, in line with those forces which are working toward improvment of conditions surrounding our food supplies.

The great need of the women is to educate themselves in wise buying. They should learn to read the entire label and find out what preservatives or other ingredients are specified, and not merely read the guarantee phrase and conclude that the Government has tested the article for purity, and that therefore it must be all right. They should realize that the guarantee label is in reality only a guarantee from the manufacturer to protect the jobber or retailer.

Much of the confusion over the Food and Drugs Act comes from the prevalent but mistaken idea that it is operated like the Meat Inspection

law. Under the Meat Inspection law the inspectors actually see the animals when alive, see them slaughtered, and examine the carcasses after slaughter. Meat which passes inspection is stamped "U. S. Inspected and Passed" and is therefore really certified by the Federal Department. Before we could similarly guarantee other foods, it would be necessary for inspectors to be present in all factories throughout the entire process of manufacture. The meat inspection is possible because there are only about 800 meat slaughtering and packing establishments that ship into interstate commerce.

Women must also have clearly in mind the fact that the federal food work must necessarily be limited to interstate shipments of products. They should understand that the federal authorities cannot interfere with commerce within a state or have any right of entry and inspection into food factories within the state lines. A factory can be run under the most unsanitary conditions; milking may be done by a man recovering from scarlet fever, or milk may be produced on a farm where a member of the family is suffering from typhoid, and the federal authorities have no power to act. The state authorities, however, can enter these factories and, provided only that their laws are efficient and the funds at their disposal adequate, can prevent the sale of such deadly unlabeled foods.

We should appreciate fully the great importance of having well administered state and local supervision of food substances which may become disease-carriers; we should insist on rigid inspection and then prevent the handling of these substances in shops where they are exposed to flies, dust, dirty hands and other contaminating influences.

When the state funds are apportioned between various departments, there is rarely, if ever, an amount given to a health department which will enable it to amply care for all the problems presented. The housekeeping of a state does not greatly differ from that of the home in the consideration of the greatest need for expenditure without neglect in other directions. Procuring safe water and milk supplies, for instance, may absorb the major part of the funds. Before we criticize our city or our state, let us learn the actual facts and then lend our constructive aid to those movements which will result in the greatest good to the greatest number. This requires educated, intelligent judgment.

First, then, we are to seek that knowledge of the discrepancies in state laws which make misunderstanding add unduly to cost of man-

ufacture and distribution, and which mean the use of money better spent on other things. We are to inform ourselves fully on the details of definitions of food and adulterations, on labels, guarantee clauses, net weights, etc. When we request or discuss needed measures we should also attack the *clean* food problems, for it has been shown that here lies the greatest danger. Dr. Barnard of Indiana takes his stand on the necessity of inspecting those who handle foods as well as the food itself. The dangers from food adulterations are small compared with the dangers of dirty food, but this phase is only now coming to the front.

We are to study our local sanitary code, city and state health laws, and ascertain the limitations of the health ordinances, the power of officials and the funds at their command. We are to compare our laws with those of other states. Wisconsin, for example, has advanced food laws.

We are to know whether food and other health matters are entrusted to temporary health officers, whether there is adequate or poor inspection, whether there is a county health officer, and how these men are appointed and what they are paid.

We need to assist in extending the work of the federal control of foods so that, while still protecting the consumer from adulterations or misbranding which means a monetary fraud, it may prevent the shipment of the dangerous unlabeled foods which can, and too often do, transmit disease.

We need to ask for effective state-wide measures in all states and an efficient permanent staff of health officials who will vigorously supervise the food supply.

There must be a constructive, educational campaign begun among ourselves. There is much to be done, but first we must learn what exists and what has been done in order that we may build on this foundation and wisely coöperate with the work of both our federal and state officials.

Our committee is willing to assist in suggesting topics, programs, study or practical work for any club whose work has been here-to-fore solely devoted to historical, literary, scientific, philanthropic, civic or art topics, and to try to prove or show that in each of these fields there is a fund of rich material directly applicable to Home Economics.

STUDIES ON FLAX RETTING. T. TAKODORO[1]

[A SUMMARY]

ELLEN BEERS MCGOWAN

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This valuable addition to the literature of flax retting contains the results of a more exhaustive study of the process than seems to have been made by any European or American investigator. The researches were not confined to the microscopical and chemical changes in the fiber bundles and their cementing materials, but cover the whole extent of the retting phenomena, the changes in different stages of retting, and the nature and activities of the micro-organisms involved.

Tokodoro's investigation was carried on near Sapporo, a center for the flax industry in Japan. The flax was typical in size and quality, and was retted in a large crate according to the usual method in that section. The author's description of the system is as follows:

"In the large crate system a pit about 60 feet long and 9 feet wide is dug in a location where the inlet and outflow of water can be easily managed, and in it is placed a large crate of woodwork. Each crate will hold about 8000 kin (13,200 pounds) of flax stems.

"When the fermentation is complete, the bundles are drawn out and are placed close together, standing on the bank for at least six hours to allow the water to drain off. When they become firm enough to be transported, they are spread out for drying. When the drying has attained the proper degree, they are again bound into large bundles and kept in a storehouse for future technical manipulations.

"The duration of immersion depends largely upon the temperature of water and air, the qualities of stems, and other natural conditions."

With respect to the anatomical changes during retting, the author states that retting was divided into three periods, and each period covered nearly the same number of days. At the end of the last period, not only the separation of the cambium layer and the isolation of the fiber, but also the destruction of the cuticle had taken place. The separation of the cambium layer from the xylem portion takes place first; then follows the destruction of the cortical parenchyma and some parts of the epidermis; and finally the isolation of the fiber itself and of the cuticle.

[1] Jour. Coll. of Agri., Tohoku Imper. Univ., Sapporo, Japan, 5, 1913, pt. 2., pp. 31–55.

The investigator found that in water retting as practiced commonly in Hokkaido, the loss of the stem due to the combined action of microorganisms and the extractive power of water is about 18 to 19 per cent. When the retting water is not changed, the loss is 14 to 15 per cent. The loss in the stem proper is about 4 per cent less than the amount above stated. About 50 to 60 per cent of the total loss is induced by the extractive power of the retting water, which is naturally influenced by the frequency of change. In Europe the loss of weight is calculated as about 30 per cent of the original weight in dew retting, about 25 per cent in water retting, and 40 to 50 per cent in mud retting. In the United States, it is estimated at about 18 to 18.5 per cent in common water retting, while in double retting the loss is about 14.5 to 15.5 per cent in the first watering, and about 8.8 to 9 per cent in the second watering.

The general conclusions drawn by the author are the following:

1. Cutin is the essential constituent of cuticle, and tannin is found in the epidermal cell. Fiber consists of cellulose with a small quantity of pectin compounds, protein, and fat-like substance as its integral part. On the other hand, the cell wall of cambium, epidermis, and parenchyma is made up principally of pectin compounds with a small quantity of cellulose. The middle lamella of fibers is composed mainly of pectin compounds. Lignin forms the chief constituent of the cell wall of xylem, while pectin compound forms that of the pith.

2. Water retting involves anatomical as well as chemical changes of the flax stem. In the first stage of retting, we observe the destruction of the cambium layer, and then of the parenchyma, accompanied by the separation of fiber bundles. As the retting proceeds, the isolation of the fiber itself and the detachment of cuticles take place. Nearly all of the constituents of the stems are subjected to chemical changes which are induced by the combined action of microörganisms and the extractive power of water. The loss of weight in the stem may therefore be taken as a measurement of retting grade.

3. The anatomical and chemical changes take place not on all parts of the stem, but only on the bark portion, i.e., outer layers of cambium. The xylem and pith remain almost unchanged.

4. The essential matters which are lost during retting are pentosan, or gummy substance in the bark portion, and fiber (cutin, lignin and cellulose). Of the three ingredients composing pentosan-free fiber, the lignin remains almost unchanged, cellulose loses its small quantity accompanying the destruction of surrounding tissues of fiber bundles

in the bark portion, and cutin is detached mechanically in the later stage of retting, with the destruction of other tissues.

5. Among other ingredients, tannin is lost completely. The larger part of mineral matters and of glucose is also lost. The quantities of protein and fat are very small and their loss may be neglected in consideration.

6. The gummy substance, or pentosan, in the bark portion of the stem is made up largely of xylan and araban, with a small quantity of methyl pentosan.

HOME ECONOMICS DAY AND THE RICHARDS FUND

BENJAMIN R. ANDREWS

Chairman, Memorial Committee

Reports of the observance of Home Economics Day, or Richards Day, began to come to the Richards Memorial Committee immediately after December 3. The Home Economics Association of Washington, D. C., the University of Maine, the Latter Day Saints High School of Salt Lake City, and the schools of Coldwater, Michigan, were among the first to report, with contributions varying from $5 to $15. Other reports have followed. The Cogswell Polytechnic School of San Francisco arranged an exhibit of old and rare fabrics. A fuller report of this will be found in News from the Field.

The Tubman High School at Augusta, Georgia, arranged an observance under the direction of Miss Clyde B. Schuman, the teacher of Home Economics. Work was exhibited and classes in sewing and cooking in operation were visited by the several hundred patrons who attended the exhibit. In the hall, booths for the sale of tea, sandwiches, candy and fancy articles, had been arranged and decorated in the colors of the various classes, each of which managed a booth. The sales realized a net contribution of $25 for the Richards Fund. A committee of students welcomed the visitors, and the local press spoke highly of the impression made by the exhibit.

The School of Domestic Science at the Battle Creek Sanitarium sent $31.50 and with not less loyalty a school in Kentucky sent its contribution of $1.55 and its hope for larger success another year. At the Albany, New York, Normal College, an address on Mrs. Richards was given by Professor Cooley of Teachers College, while at Pratt Institute, Brooklyn, one of the most striking observances was carried out

by a committee of students who provided a speaker from each of the several departments of the School of Household Arts and Science.

The Richards Memorial Committee desires to announce that observances may still be arranged in public and private institutions for any convenient day in the current school year. Programs were suggested and outlined in the September *Bulletin of the Home Economics Association*, and will be furnished on request.

A suggestion for the Richards Memorial Day yet to be tried by many club and school groups is along the line of bringing town and country nearer together. The women's clubs of any city could ask country schools in their neighborhood to hold an exhibit and sale of cakes, candies and other articles made in their departments for the benefit of the Fund, the cost of materials to be deducted from the gross receipts. Incidental advantages of the plan need not be cited.

A national committee is now being formed with representatives in each state, to promote the observance of Home Economics Day, and in certain states as North Dakota, much progress has been made. The plans for 1914–1915 are already being drawn up and provide for a celebration of December 3, 1914, as a "Richards-Rumford Day," in joint recognition of the one hundredth anniversary of the death of Count Rumford, the first scientist to study home problems, and of the services of Ellen H. Richards, whom all revere as the founder of the Home Economics movement. Sales of the Life of Ellen H. Richards by Caroline L. Hunt ($1.62 postpaid), the Syllabus of Home Economics (paper, 50 cents, cloth $1), and the new monograph The Visiting Housekeeper (paper 25 cents, cloth 50 cents) will aid the Fund. Orders may be sent to the JOURNAL.

EDITORIALS

The New Department

With this issue the JOURNAL begins a new department, whose aim will be to offer material that shall be of definite help to the housewife in solving the questions that present themselves to her daily in the running of her home. This is not such an innovation as might appear, for, as any one who has read the JOURNAL will agree, although many technical and scientific articles have appeared, in every number there has also been much that the interested reader as well as the specialist could directly apply to the problems of food, clothing, and shelter. But as universities provide technical schools, although their regular scientific courses are rich in suggestion of what may be used in the practical arts, so the JOURNAL has established a Housekeepers' Department, since it feels that the woman running a household has a right to demand that the reports of scientific work in chemistry, physics, etc., should be shorn of many details that play a necessary part in the training of student and teacher and be presented in a form more directly suited to the needs of the home. The housewife is working under pressure, often of the hardest, and has little time for study. Knowledge to be of most use to her must be in a highly digestible form, if not predigested. She is running a business whose daily output of three meals a day, with warmth and comfort and order for a household must not fail, and she cannot turn this home factory into an experiment station. Although she can and does gather knowledge by experience, this is often more costly in the end than laboratory work, and, moreover, there remain a great number of problems which need for their solution every means research has at its disposal, and so it is right that others should solve many of the housekeeper's problems and give her the results in concrete form. It should be noted that housekeepers' problems are already receiving attention in laboratories, and the interest in such research is growing. The JOURNAL in its new Department will endeavor to keep the housekeeper informed of the progress which is being made and to help her to use the valuable data which are being accumulated.

Our plan will be to cover a few main lines of work.

I. Reports on the best *resources in equipment, arrangement, and house construction.*

II. Reports and suggestions on *standard processes* now carried on in the house. Our object is to bring about greater economy of materials, time and energy; but at the same time to reveal the principles on which such improvements are based in order to show the way to other improvements, thus introducing motive and interest into what is too often monotonous drudgery. It has been abundantly proved that many principles of the new business efficiency can be applied to housework; the best result of an effort to apply them is what has been called "the efficient attitude of mind."

III. To give the *scientific principles* underlying questions of foundational importance classifiable under food, clothing, and shelter. For instance, in our present issue we give the basic principles of nutrition illustrated by menus, an article which we consider so complete and so valuable that we shall later refer to it rather than restate it; and we hope to develop a new cumulative index that shall make such reference easy and rapid for the reader.

IV. To show *coöperative resources:* (a) coöperation from within the household; (b) coöperation in neighborhood groups; (c) coöperation in municipal, state, and government reforms.

The "extra" housekeeping or the development of household arts practiced outside the home will include experiments of groups in cooperative buying and cooking, and laundry work; the sanitary condition and methods of inspection of public laundries, bakeries, markets, etc.; laws relating to weights and measures and their enforcement; comparison of cost and quality of work done in the house with that of work done out of the house.

From various quarters we hear the cry, "Oh, reform it altogether!" We are told that as soap making went out of the house so must all other processes. We are urged to turn over at once all house work to a mythical person called the specialist and to agencies not yet fully developed and still wholly independent of sanitary or other control. To their credit women have refused to do this. They will first examine these utilities. Some will be adopted but many household methods will be retained as too intimate to comfort and health to be trusted in outside hands.

We hope to furnish material that is usable and timely, helping to meet present probems and to adjust methods to changing conditions.

Our space will not allow us to print something under all these heads in every issue but a due balance will be kept, and whatever subject is taken up will be treated on the basis of exact knowledge so far as the best workers can furnish it up to date. Studies are now being made for us in different laboratories by competent workers.

With every decade there are to be found in the housekeeping ranks a greater number of intelligent and well-trained women, women who will not be content to follow an unmeaning round simply because it was done by those before them. The new unrest of the time, the growing skill that women are showing in team work, the habit of questioning all things are all leading to real discoveries concerning methods that shall make the individual home a financial, aesthetic and ethical success.

Score Cards

The use of the score card as a measure of complex situations is spreading. It affords an objective method of measuring data that are otherwise difficult to judge fairly, e.g., dairy condition, live stock, sanitation of restaurants, housing, house equipment, quality of bread, adequacy of nutrition, etc. The method has been perfected in agricultural science and is equally necessary and applicable in household science. The Executive Committee of the American Home Economics Association is arranging for a committee to study and report upon score cards in Home Economics. Those who have devised or used such score cards are asked to send copies to the JOURNAL.

Back Numbers Wanted

The JOURNAL will be glad to buy at forty cents ($0.40) per copy the following numbers of the JOURNAL: Volume I, number 1, and Volume III, numbers 2 and 3. The amount for returned numbers will be credited to the subscription or paid in cash, whichever is desired. Please send to the JOURNAL OF HOME ECONOMICS, Roland Park Branch, Baltimore, Md., and notify the JOURNAL what numbers are being sent.

HOUSEKEEPERS' DEPARTMENT

The editors of the JOURNAL earnestly request assistance from the readers of this new department. They especially desire suggestions for timely topics on which information should be gathered; data either given directly or by reference to books and articles; and records of personal observation.

MENU MAKING AND THE NUTRITIVE VALUE OF MEALS[1]

EMMA S. JACOBS

The menus given below furnish some idea of proper combinations of the various food stuffs and the amount of raw material needed for the individual doing moderate work. If every housekeeper will keep accurate record of the food purchased and the number of meals served from it, also of the weight of that which is thrown away she will soon have sufficient data to enable her to closely estimate the amount of food to be purchased for her family. This information, the study of bulletins on food,[2] and close watching of the markets will help her to run her end of the business of homemaking in a scientific and economical way.

The menus show not only the weight of the individual portion but also the amount of protein and of energy the portions supply. The values for weight, for protein and for energy, of the individual dishes, added together give the totals for a meal, and the totals for the three meals added together give the totals for a day's food.

To help the housekeeper make other menus showing weight of portions and their protein and energy content, a table is given following the menus which shows the weight and the protein and energy content of individual portions of a considerable number of foods or foodstuffs, particularly those commonly used.

[1] For further study see page 15.

[2] U. S. Dept. Agr., Office Expt. Sta. Bul. 28. The Chemical Composition of American Food Materials. U. S. Dept. Agr., Office Expt. Stas., Circ. 46. The Functions and Uses of Food.

Menus: Weight of foods per person and their protein and energy content

	WEIGHT	PROTEIN	ENERGY
Breakfast	*ounces*	*ounces*	*calories*
One peach	2	0.008	27
Cream of wheat	1	0.110	105
with cream	2	0.074	46
Soft cooked egg	2	0.268	96
Coffee with sugar and cream	1		57
Rolls with butter	3½	0.273	322
Total	11½	0.733	653
Lunch			
Cream soup of green peas	5	0.126	113
Bread and butter	4	0.273	434
Blueberries with sugar and milk	5	0.074	146
Sugar cookies	1	0.07	120
Total	15	0.543	813
Dinner			
Lamb broth	4		25
Baked bluefish	8	0.088	86
Mashed potatoes	4	0.088	194
Buttered beets	3	0.096	180
Tomato and cucumber salad	4		296
Apple tapioca	3	0.096	269
Pudding with cream	2¼	0.074	46
Bread and butter	4	0.273	434
Coffee	1		57
Total	33¼	0.715	1587
Total per day	59¾	1.991	3053
Breakfast			
Cracked wheat	1	0.111	105
with cream	2	0.074	46
Breakfast bacon	1	0.100	65
Creamed potatoes	3	0.092	128
Corn muffins and butter	5	0.250	414
Total	12	0.627	758

Menus: Weight of foods per person and their protein and energy content.—Con.

	WEIGHT	PROTEIN	ENERGY
	ounces	*ounces*	*calories*
Lunch			
Split pea soup	3	0.258	180
Bread and butter	3½	0.273	322
Cream rice pudding	4½	0.167	270
Total	11	0.698	772
Dinner			
Tomato bouillon	6		30
Planked fish	8	0.088	86
Baked potatoes	4	0.088	96
Stewed corn	2	0.056	57
Spinach	2	0.042	32
Bread and butter	4	0.273	434
Apricot short cake	2	0.176	267
Total	28	0.723	1002
Total per day	51	2.048	2532
Breakfast			
Raspberries	3	0.02	138
Plain omelet	2	0.268	96
Baked potato	4	0.088	96
Rolls and butter	3	0.170	387
Coffee	1		57
Total	13	0.546	774
Dinner			
Clam broth	6		30
Baked chicken	4	0.772	260
Boiled rice	2	0.160	324
String beans	2	0.042	12
Swiss chard	3	0.042	32
Cottage pudding	4	0.250	761
Bread and butter	3½	0.273	322
Coffee	1		57
Total	25½	1.539	1798
Supper			
Chartreuse of beef	5	0.310	176
Bread and butter	3½	0.273	322
Baked apple and raisins	3	0.021	134
Sponge cake	2	0.160	106
Total	13½	0.764	738
Total per day	52	2.849	3310

Weight, protein and energy of individual portions of some of the common foods

	WEIGHT	PROTEIN	ENERGY
	ounces	*ounces*	*calories*
2 level tablespoonfuls coffee for one cup	½		
1 level tablespoonful sugar	½		57
1 level tablespoonful butter = 1 inch square by ½ inch thick	½		112
2 level tablespoonfuls flour (sifted)	½	0.005	52
1 tablespoonful olive oil	½		85
1 level tablespoonful cocoa for one cup	¼	0.054	38
2 level tablespoonfuls fine tapioca	½	0.002	51
¼ cupful corn meal	2	0.168	194
¼ cupful cream of wheat	2	0.220	210
¼ cupful rolled oats	1⅛	0.195	135
¼ cupful rice	2	0.160	324
¼ cupful canned beans	2	0.022	32
¼ cupful canned peas	2	0.072	32
¼ cupful canned tomatoes (home product)	1	0.012	65
¼ cupful coarse hominy	2	0.116	206
¼ cupful cottage cheese	2½	0.522	80
¼ cupful top milk for cereal	2¼	0.074	46
⅛ cupful cream sauce for vegetables	1⅞	0.026	34
¼ cupful cream sauce for escalloped dishes	2⅞	0.052	68
¼ cupful cream sauce plus ¼ cupful milk for cream soups	5⅛	0.126	113
3 slices bread, ½ in. thick, 4 in. square	3	0.273	210
8 dates	2	0.042	202
6 prunes	2	0.042	175
1 apple	2	0.008	27
dried apples, peaches, pears, apricots	2	0.094	161
2 canned peaches, pears	5	0.035	69
1 egg (medium)	2	0.268	96
1 potato (medium)	4	0.088	96
6 lettuce leaves	1½	0.018	9
trimmed kale, spinach, other greens	3	0.042	32
2 thin strips breakfast bacon (if melted fat from it is also used)	1	0.155	130
macaroni	1	0.134	104
cheese (American)	½	0.144	64
1 strip ham, 1½ inches wide by 3 inches long	2	0.326	242
2 slices roast lamb or beef	4	0.768	264
raisins	1	0.026	100
1 banana (without skin)	5	0.065	144
8 English walnuts (shelled)	1	0.166	205
16 almonds (shelled)	1	0.210	189
2 loin chops (trimmed)	4	0.640	424
3 sausage cakes	3	0.390	398
2 potato croquettes	3	0.061	56
2 onions	6	0.096	84

The following table shows the general percentage composition and cost of some of the staple articles of food. The maximum and minimum figures are given in order that the range found under usual conditions may be seen. The prices given represent actual conditions noted at the time the paper was prepared. Such a table will help the housewife to compute the protein and energy content of individual portions of a number of foods (raw). The portion to be served should be weighed before cooking and the protein it supplies calculated from the weight of the portion and the percentage of protein in the foodstuff as shown by the table. The energy should be calculated from the weight of the raw material and the energy value for a pound of such material as shown by the table. The calculations involved are simple.

Composition and cost of some common food materials

NAME OF FOOD	COMPOSITION OF FOOD					COST OF FOOD PER POUND
	Protein	Fat	Carbohydrate	Mineral Matter	Water	
	per cent	*per cent*	*per cent*	*per cent*	*per cent*	*cents*
Meat—Beef, mutton, etc.						
Flank	14–25	1–27		0.5–1	33–68	10–15
Neck	14–21	2–11		0.5–1	18–14	10–15
Clod	16–20	1–17		0.9–1.5	52–59	15–18
Round	16–20	2–23		1–1.5	50–65	18–25
Loin	12–18	13–24		0.9–1.5	44–66	25–40
Ribs	11–19	2–19		0.5–1	39–73	25–30
Poultry	16–21	1–20		0.4–1.5	47–75	22–30
Fish	10–22	1–17		1–2	35–85	10–40
Milk—whole	3–3.5	4–5	5	0.7	87	4–6
Skimmed	3.5–4	0.3–1	5–6	0.7	90	2–3
Eggs	11–16	8–15		0.6–1	67–75	20–40
Vegetables						
Potatoes, etc	1–2	0.1–2	13–27	0.5–1	67–84	1½–3
Peas, etc., (dried)	12–24	0.5–3	57–70	2–4	6–12	8–10
Peas (green)	1–9	0.1–0.3	14–29	0.7–2	58–89	10–15
Cereals	6–16	0.1–6	69–81	0.2–2	2–13	2–12
Green corn	2–3	1–1.1	14–22	0.7–0.8	72–18	not determined
Greens	2–5	0.2–0.5	3–10	1–4	81–92	
Tomatoes	0.3–1	0.2–0.5	2–3	0.3–0.5	91–96	2–25
Fruits	0.1–1.5	0.1–1	8–29	0.2–1.1	77–92	not determined
Nuts	14–27	24–70	6–42	1–4	2–45	10–30
Macaroni	7–16	1–5	67–76	0.3–7	7–12	10–20
Cheese	15–30	17–38	1–4	3–6	31–45	20–40

The menus given are intended simply to illustrate the method of calculation and not as guides to be followed in detail in the planning of the daily diet. The quantities of protein and energy supplied are rather low and correspond to the minimum rather than the average for a man who is doing moderate muscular work. If a housekeeper planning meals for herself, her husband and three children should select these menus, she might well consider the children as adults and take five times the quantities named, instead of four as she would if allowances were made for the fact that a woman and a child eat on an average somewhat less than a man. The menus would then give an opportunity for the second helpings which the man and possibly others would want, and so increase the protein and energy secured per day.

The menus may also serve as examples of meals which are well balanced as to variety and nutritive ratio, i.e., the proportion of protein to energy, and as examples of simple meals which are not too plain in character to appeal to those who like to pay attention to the graces of the table. In this respect, also, they may be considered to represent the minimum of such meals, for it is obviously easy to add to them but no one of the dishes could be taken away from the menu without materially changing its character. The meals may easily be made more elaborate by adding one or more vegetables to the dinner, or a salad now and then with or without cheese, by using milk as a beverage, and so on. Each added dish means more energy provided, but need not necessarily increase the amounts eaten as many persons will simply eat a more varied, but not a more hearty meal.

Generally speaking, the more elaborate the menu the greater its cost and the greater the opportunity for waste. If out-of-season fruits and vegetables are added, and other foods which have a high water content and consequently low nutritive value, the cost is increased out of proportion to the nutritive material supplied. However, such foods are prized very largely for their wholesomeness and flavor rather than for nutritive material. If foods rich in protein and energy, like cheese or beans are added, the nutritive value would be increased considerably and the cost not very materially. Such considerations as these are fundamental to the intelligent planning of meals, and housekeepers should learn to think about them in these terms.

A $3 AND A $16 LUNCHEON FOR TWELVE PERSONS

In a recently published cook book[1] Mrs. Thomas R. Marshall, wife of the Vice President of the United States, contributes to the discussion of possible economies in living, by giving data regarding two luncheon menus, one of them inexpensive and the other costly.

Menu No. I

Beef bouillon	$0.45
Filet of beef	3.00
Squabs	6.00
Globe artichokes	2.00
Potato balls	.20
(Salad) Grapefruit and pimentoes with lettuce and mayonnaise	1.95
Roquefort cheese with crackers	.50
Fresh strawberry ice cream	1.40
Angel cake	.45
	$15.95

$1.33 a plate.

Menu No. II

Tomato bouillon	$0.25
Beef balls	.66
Tomato sauce	.20
New carrots	.24
Creamed potatoes	.22
Cabbage salad with cream dressing	.45
Tea biscuit	.30
Coffee jelly with whipped cream	.40
Eggless cake	.20
	$2.92

$0.25 a plate.

In the discussion of the menus, it is pointed out that although the first is five times as costly as the second it supplies only a little more protein. In other respects the two menus are practically of equal nutritive value, and both in Mrs. Marshall's experience have been found palatable and pleasing. Recipes for the dishes enumerated are given in the publication cited.

The menus afford a good illustration of the value of intelligence, skill, and thought, in the selection of the less expensive dishes and

[1] The Economy Administration Cook Book. Edited by Susie R. Rhodes and Grace P. Hopkins. Published by W. B. Conkey Co., Hammond, Ind., 1913, pp. 696, pls. 46. Price $2.00.

their combination into menus which do not unduly sacrifice the pleasures of the table. The housewife who wishes to combine economy with good living can with advantage study the menus for her daily meals by the method suggested in this comparison of luncheon menus.

COÖPERATIVE BUYING

One may indeed wonder if the middle man sleeps well o'nights, so determined an onslaught is being made on his very existence.

Coöperative buying clubs have been started in many places. We subjoin partial reports from four.

No. I. The Civil Service Coöperators of Washington, D. C. Number of members 200. Shares $1, each giving one vote with privilege of buying at the store. Preferred stock at $5 a share is also to be obtained through dividends or cash payment. The members receive on Saturday a list of articles in stock with current prices and they send in orders on Monday; delivery follows within two days.

Just how the plan is working will be described in our next issue by a member who does not claim to be an enthusiast as to the principle, nor an optimist as to the success of the venture, but is apparently a keen observer of an experiment in which we are all interested.

No. II. Coöperative Buying by a Club of Four. Experiment No. 1. Several crates of strawberries were bought direct from a commission man at 6 cents a box (market price 10 and 12 cents) and delivered free to one address. The woman at whose house the delivery was made canned her berries at once and had no loss. Gain 50 per cent on purchase price.

Second purchaser did not call for berries at once. When she canned them next day she found so much loss that the coöperative buying gave no advantage.

Third purchaser carried eighteen boxes home on car, lost two boxes by accident, could not preserve the fruit until next day when additional loss from keeping took away all profit. Adding to these losses 10 cents for car fare she found that the high retail price charged at her own door in suburbs would have been cheaper.

Fourth purchaser being a neighbor of the buyer paid nothing for delivery and had as good results as the first by preserving the fruit while the berries were in good condition. Gain 50 per cent.

Experiment No. 2. Christmas order of nuts, prunes, candies, raisins, etc., purchased advantageously wholesale but purchasers

allowed the firm to think they were dealers having small stores. One person compared with an accurate list of her last year's order from large reliable retail firm and found same goods at wholesale cost 15 per cent less. All the purchasers were pleased with quality of goods and money saving but were not willing to again adopt misrepresentation in order to gain profits.

Experiment No. 3. One member tried to buy tea-toweling by the bolt but found that the grade she could buy (and then only because she was a friend of the dealer) was not satisfactory in quality.

Experiment No. 4. Two purchasers in trying to buy apples, potatoes, etc., found they could get advantageous rates only by the barrel, and they had no place for keeping this quantity without loss.

Experiment No. 5. Wholesale grocery house refused to fill a large order unless the buyer had license.

Conclusion. One member of the group should obtain a license and then purchase at a good reduction. Perishable goods are very difficult to manage in wholesale lots, few houses having proper storage facilities. There may be large saving in buying ordinary dry goods or groceries coöperatively. The average woman of today is obliged to consider personal inconvenience, car fare, time consumed, exact quality wanted, and carrying of packages as overbalancing any but a substantial profit.

No. III. The Coöperative Society of Montclair, New Jersey.[1] Our store is now in its second year of existence and is doing a business of $100,000 annually. It serves over three hundred families, each one having contributed from $10 to $200 to form a capital of about $9000, sufficient to buy the appliances and stock. We are distributing per month about $10,000 worth of meats, fish, fruit, vegetables and groceries at a gross profit of about 20 per cent and a cost of 13 per cent for doing business. This 13 per cent includes the cost of delivery. Part of this business is from non-members who do not share in the dividends, so that our present operations indicate a saving to the consumer of about 8 per cent with better assurance of cleanliness, purity, quality and measure than can be had at the average store.

Our form of organization is that of the Rochdale Coöperative Store which consists essentially of stock subscriptions from members. In our case members take from one to twenty shares at $10 each, receive 6 per cent per annum on stock from first earnings, each stock-

[1] Description given by the president of this society. More details with advice as to organization will appear in the April number.

holder having but one vote regardless of the number of shares he holds. All of the gains in excess of this interest, except for a small reserve fund which would usually go as profits to a proprietor, are divided among the members in proportion to the amount each has purchased. Goods are sold for cash only and at about the prevailing prices for same quality and service in other stores, the savings being paid back in the form of dividends.

Our store has one novel feature in its method of meeting the delivery of goods problem. This service, which has been found very expensive in other places, is by our system reduced to a cost of less than 3 per cent on the gross business. The plan amounts to a charge for delivery but is put in the form of a bonus to those who do not use the delivery service. The plan is simply this: at the end of each quarter we give all our members credit for a discount of 5 per cent, the consumer who has had no delivery receives this whole 5 per cent in cash while the housewife who has found it desirable to make use of the wagons is charged according to the service she has had, this charge being deducted from the 5 per cent. The charge is made at so much per call, being the cost which has been ascertained by dividing the total delivery expense by the number of calls made during the quarter. Our cost at present is around 9 cents per call. For example, if a woman has bought $100 worth of goods and had twenty-five calls she is credited with $5 and charged with twenty-five times 9 cents or $2.25, and receives a check for the remainder, $2.75. By this system the cost of delivery, which in other stores amounts to as much as 10 or 15 per cent, is brought down to a very small figure, our cost for October being only $2\frac{1}{8}$ per cent on the volume of business for that month. By this plan the member who makes no use of delivery is able to get all the saving the store makes thereby and the housewife is encouraged to so systemize her ordering as to require the wagon to come only when necessary. This is very different from what is the case with the ordinary store where a woman can have as many deliveries per day as she wishes and pays no more for her goods than the woman who carries her purchase home.

No. IV. Coöperative Theatre and Opera Going. Experiment of a church club living in a suburb of New York. This is just a simple way of doing together what could be done separately with much less advantage. A season's ticket at the Metropolitan Opera House is not within the means of every one, but the season ticket holders naturally command the best seats. A group purchased two season

tickets together and each couple used them in turn, each hearing four or five of the twenty-three operas. It means that one may perhaps hear operas that he has already heard or cares less to hear than some others, but the underlying assumption is that, at the Metropolitan, any opera, old or new, is well worth the money and that the law of chance is fair in the long run and satisfactory exchanges can generally be made. The group will undoubtedly enlarge from year to year and purchase more tickets. A fractional share of the new Century Opera Company stock has been taken in order that such a group may secure the full advantages of this opera enterprise also.

The Drama Society has an annual membership which costs $40 a year. This entitles the holder to two of the best orchestra seats for an early performance of each of ten plays which they recommend. It is part of the growing movement to organize the playgoers and to influence the drama for the better by stimulating attendance at the good plays. The early weeks are the critical ones in the life of a new production and it must be supported then or be withdrawn. Many a good play is discovered too late. As our church group wanted to lend a hand in this good work, we took one membership and the secretary of the group secured the names of ten couples, each willing to buy the tickets for some recommended play once during the year. This means that those of moderate means can do what, under present conditions, only the wealthy can afford. Each time a play is recommended the secretary telephones to those on her list until she finds some for whom the date is convenient and who desire to see that particular play. A certain measure of self sacrifice may be demanded in carrying out this plan, and utterly selfish people could not use it. But the advantages, which are partly altruistic and partly cultural, outweigh the obvious disadvantages.

MARKET INVESTIGATION

To illustrate what the united work of housewives can accomplish we quote from a report of the committee on markets of the Women's Municipal League of Boston.

City regulations for provision stores are now in operation. They are comprehensive, aim directly at local Boston abuses and should do a great deal of good. That these regulations were secured, the Board of Health states to dealers in the wholesale sections, is due to "the women's demand for them."

We have in preparation a map of the city that shall have marked upon it by a sticker the location of every market in Boston. These stickers are of three different

colors. By this device the grade of the market whether good, poor, or very bad can be seen at a glance. In this work we were aided by a group of twenty-four Radcliffe students who were given this work in our department to do in place of a thesis.

Professor Monroe wrote us a letter of hearty appreciation of the quality and scope of the work. Because the work was to be done as a part of a college course great pains were taken in the preparation of the plans for the work. The scope, we feel, has proved all we hoped for it, and its working quality more than we dared hope.

When the maps are completed and we have in hand a catalogue of all the markets of the city, we intend devising a plan by which each natural section shall look after its own problems.

DISEASE CARRIERS

It is encouraging to note the progress that is being made all over the country by women's civic leagues and by health boards in improving unsanitary conditions.

Insects and pests have been vigorously fought, dumping grounds have been changed into garden plots, swamps have been drained, dairies and food manufactories have been regulated and inspected, owners of industries involving the use of poisonous chemicals (e.g., the manufacture of paint and matches) have recognized the right of their employees to work under conditions which are not a menace to health.

The secretary of the Kansas State Board of Health, Topeka, Kansas, has prepared an outline for the use of women's clubs in studying health questions. Under foods and drugs appears a study of foods, including their preparation and preservation, a discussion of a proper ration and selection of foods, food adulteration, the sanitation of food supplies, drug adulteration and drug addiction. Rural sanitation, school sanitation and hygiene, the cost of preventable disease, the disposal of waste and the conditions for a pure water-supply are some of the topics included in the outline. Reference to bulletins, government publications, journals and books are also included.

In the June (1913) Bulletin of the Kansas State Board of Health we find this:

In the United States the insect which we most fear, because it is the transmitter of so many diseases, is the common house fly. It has been incriminated as the distributing agent in practically all of the enteric group of diseases. Its annual death toll in the matter of infantile diarrhea, or summer complaint, is enormous. It is conceived in iniquity, bred in filth, and spends a life of crime. The eggs are laid by preference in manure, and this should be our starting point in killing off

this insect. Clean stables, proper disposal of manure, clean yards, proper disposal of garbage, screened houses, screened pantries, screened foodstuffs, all act as deterrents to the spread of disease by this insect. Mechanical cleanliness is most important; then comes the use of disinfectants, such as chlorinated lime, carbolic acid, cresylic-acid preparations, and the like; and, last of all, do not forget Paris green, sprinkled on garbage and manure. It kills off the maggots as they come to the surface. It is cheap, efficient, easily procured, and effective.

In the extermination of vermin of any sort there is no royal road. The battle must be carried on along every avenue of the existence of the creature which it is desired to exterminate. Thus, in combating insects, they must be killed in the egg, the larval, the pupal, and the adult stages. They must be prevented from laying eggs, they must be prevented from gaining sustenance, they must be fought by day and by night, in the places where they live, and advantage must be taken of an accurate knowledge of the breeding habits and life cycle of the species to be combated.

Miss Jean Dawson of the Cleveland Normal School, who has done so much towards making Cleveland a flyless city has issued a pamphlet of useful information about flies. Various magazines have urged that this is the time of year to institute campaigns in order to destroy the flies that have wintered over and to clear away or disinfect breeding places.

Mosquitoes of different species transmit malaria, yellow fever and other diseases. They lay their eggs in quiet water not only in swamps but in our back yards and eaves-troughs or wherever water is kept standing. What has been said about the general method in exterminating flies also applies to mosquitoes. They should be attacked in their breeding places. Pools and swamps should be drained or filled or treated with crude oil or salt. Where this is not safe small fish may answer the purpose. Cisterns, water barrels, or any receptacle that must be kept with standing water should be covered, and cans, flowerpots, basins, etc., should never be allowed to collect water. Doors and windows should be screened with a wire mesh of from 16 to 18 to the inch. Additional screening for beds, if necessary, will prevent the mosquito from doing its most deadly work at night.

The Rat—a Sanitary Menace and an Economic Burden is the title of an article in the U. S. Public Health Reports, vol. xxviii, 1913, no. 27. To quote in part:

The estimate of one rat per human being for the continental United States coincides with that made for Great Britain and Ireland by the Incorporated Society for the Destruction of Vermin, and also with authoritative figures for Denmark, France, and Germany.

The bubonic plague is, primarily and essentially, a disease of rodents, chiefly

the different species of rat, and is conveyed to human beings from plague-infected rats through the agency of the fleas which infest the sick animal.

The extermination of rats is not nearly so easy as fly destruction. An adult rat will on the average produce young six times yearly and from six to twelve young in every litter. Rats can be destroyed by trapping, by poisoning, and by using natural enemies, as certain breeds of cats and dogs. To insure success to these measures it will be necessary to curtail the rat's food supply by properly disposing of garbage and table refuse and by preventing rats from gaining access to such food as is contained in pantries, groceries, markets, stables, etc. The prerequisite of successful trapping is that no food other than the bait should be available to the foraging rodent. Other things being equal, highly savory articles, such as cheese and toasted bacon, will more quickly attract rodents than will food without odor, but the idea that a rat can be enticed into a trap by the employment of bait more appetizing to him than the surrounding food supply is fallacious. In one instance, where a bakery was overrun with rats, cheese, bacon, meat, vegetables, flour, nuts, and every known kind of bait in turn was used without avail. Finally the bakery was moved and the building closed preparatory to rat-proofing. Three or four days after the removal of the stock, when all loose flour and food had been consumed by the rats, the trapper caught over 30 rats in one morning and in four days the place yielded a bag of some 80 rodents. Traps or poison placed in the neighborhood of an overflowing garbage pail, in a pantry with open bins and exposed food or in groceries and warehouses having foodstuffs spilled over the flour, will only result in wasted endeavor.

Along with other measures for the destruction of rats, all buildings, chicken yards, garbage receptacles, sidewalks, and planked areas must be built or repaired to prevent rat harborage. Plank sidewalks and plank coverings for yards should be avoided. Cinders or concrete are preferable for this purpose. The latter should have marginal protection to prevent rats from burrowing beneath it. Double walls with a dead space between should be avoided or if used, they should be rat-proofed at top and bottom. Attics should be well opened and kept free of dunnage or other refuge for rats.

The municipal government will have to assist the efforts of citizens along these lines by creating and enforcing suitable rat-proofing laws.

City water is often polluted because of lack of control of the water shed or because of indifference in regard to waste matter of all kinds that is emptied into a river along its course. In the country, sewage and water supply are frequently very closely related. Consequently peope who go from a city where the drinking water is safe, may become victims of typhoid.

There should be such a united outcry against these conditions that every city and every country dweller would be compelled to furnish safe drinking water. Vacationists should refuse to patronize any country place which supplies impure water.

If there is the slightest doubt as to the quality of the water which anyone is obliged to drink, the following simple remedy [according to the July (1913) Bulle-

tin of the Kansas State Board of Health] will make it safe: Get a one-pound metal can of chloride of lime, or bleaching powder. Take a level teaspoonful of powder and a few drops of water, and make a thin, smooth paste in a teacup. Then dilute this paste with four cupfuls of water. Place this stock solution in a clean, stoppered bottle and keep corked tight.

This is enough to disinfect 250 gallons of water. Use a teaspoonful of this stock solution to two gallons of water. Stir well, and use in from a quarter to half an hour. If the water has a slight odor of chlorine, use slightly less of the stock solution. Find out how much stock solution it takes to give a slight odor to the water, then use about one-fourth less than the quantity necessary to produce odor.

Water thus treated is absolutely harmless. The chloride of lime is consumed by the water in ten or fifteen minutes, and even if it were not, in such small quantities it would be harmless.

Fresh stock solution should be made every three or four days, and the powdered lime should be kept in a tightly closed can.

CLEAN HANDS

The beauty of clean, soft hands and well manicured nails is of no consequence compared with the vital point of cleanliness. When we consider the thousands of ways in which disease is transferred by unclean hands it is astonishing how unconcerned we have been and how placidly we allow the transfer of typhoid, tuberculosis, etc., to continue in our homes, in schools, markets, hotels—in fact everywhere.

Crusades have been conducted against flies, unclean streets, and various causes of occasional or possible infection or contamination but the unclean hands which constantly come in contact with food are allowed to carry on their deadly work undisturbed. It is true that some effort has been put forth by the best food manufacturers who have posted in their work rooms: "Never return to your work room, after any absence, without washing your hands." If this were more commonly required the "Typhoid Mary" incidents would disappear.

Diligence on the part of the housewives could soon bring about the elimination of this source of danger. There must be personal care that their own hands are thoroughly washed and rinsed in running water before going from the street, the toilet, or the general housework into the kitchen—in short, before handling any food or anything that is to contain food. The same must be exacted from their cooks and servants. Their children must be taught to follow their example and also to avoid the habit of putting fingers into the mouth or of biting finger nails.

By concentrated and coöperative effort outside the home they can demand clean hands in bakeries, groceries, markets, hotel kitchens,

dairies, and in every place where food is handled. Wrapped bread is an illustration of a defensive measure in a case where delivery may mean contact with hands that have just curried the horse.

The coöperation of food manufacturers, food dealers, and food inspectors should be enlisted.

Teachers can also aid in this good work by the proper instruction of pupils and by the demand for warm, running water and paper towels in the school lavatories.

Publicity and open discussion of this topic, often regarded as too unpleasant to be mentioned, should be encouraged by every parent, housewife, and teacher.

EXERCISE FOR THE HOUSEWIFE

In the August–September (1913) bulletin of the Texas State Board of Health, Ella Randall Pearce makes suggestions in regard to dress and exercise for the housewife which, if carried out, the writer quoted believes will banish fatigue and promote good health and help the homemaker to secure a growing increase in efficiency and prevent housekeeping from detracting from the joy of living.

The early morning exercises are as follows:

1. While lying in bed, slip the pillow from under the head, flatten the back, throw the arms outward, and stretch completely from head to foot. Then, folding the hands loosely above the stomach, inhale several full, deep breaths, drawing in all the air you can with comfort, and slowly and regularly exhale in the same complete and deliberate manner.

2. Slip the feet under the foot rail or behind a broad strap arranged for the purpose; then, with the arms still loosely folded, draw the body up to a sitting posture, keeping the lower limbs straight. Relax very slowly, returning to the first position, and repeat this exercise several times.

3. Slip the feet from their bonds and, lying flat, raise the lower limbs slowly and steadily to a position at right angles to the rest of the body, and repeat several times.

Some task which has strained or cramped the body may be offset by the following: Stand erect with arms swung above the head, palms forward. Without bending at the knees sway forward and downward as far as is easily possible. Stand erect again; then, with arms still upright, swing backward in the same manner. After this,

place hands on hips, and, bending at the waist, lean forward; then backward; next to the right; then to the left; and finish by twisting the body at the waist line, by a succession of the foregoing movements.

Other suggestions may be thus summarized: When at work, keep the body in correct position—head erect, chest forward, abdomen held in, and the weight of the body on the balls of the feet. Sit as much as possible at work, use the knees and hips more and the back less when stooping; keep the weight of the body over the feet when ascending or descending stairs, and take a few minutes of complete relaxation of body and mind every day. If there is no other time for outdoor exercise, at least walk to the market or the grocery. About the house wear comfortable, neat clothing, and by all means avoid worn out street-wear and ill-fitting, shapeless shoes, for slovenly habits in dress tend to induce slovenly habits in work and also a carelessness and lack of interest in all matters of importance to the homemaker.

COST OF LIVING

That the housekeeper's problem of the increased cost of living is not an imaginary one or one caused by increased extravagance is shown by a report of the Chicago Nursery and Half-Orphan Asylum.

Average cost of maintaining one child for a year:

1874 to 1883	$79.98
1884 to 1893	88.68
1894 to 1903	101.45
1904 to 1913	140.60

The contributions of food, clothing, etc. (not included in this estimate) were approximately the same during the different years and therefore do not affect the figures.

WASTE IN PREPARING FOOD

A paper by Charles S. Prizer read before the 40th annual meeting of the National Association of Stove Manufacturers, while mainly a plea for new methods of advertising in the stove business, introduces in its last section an idea which might develop interesting possibilities if properly worked out. The author estimates the total annual expenditure for food in the United States on a daily 25 cent per capita basis, and from that the value of food wasted, which he assumes to be 10 per cent of the total food and which would thus amount in value to about $821,000,000. He assumes further (one is not told why)

that 6 per cent of this loss, or almost $50,000,000, is due to defective cooking apparatus, and thus paves a smooth, straight way to the economy of exchanging old stoves for new. As has already been suggested, the figures seem to have been chosen somewhat arbitrarily. The necessary data for calculating the considerable loss of fuel and material which is undoubtedly due to poor stoves ought to be obtainable. Who will help us to obtain such data?

SUGGESTIONS TO RELIEVE THE MONOTONY OF HOUSE WORK

Early rising for the housewife, the first hour to be spent in reading, writing or thinking, in order, first, to cultivate the use of the intellectual powers when they are at the freshest; nothing will give more satisfaction to the restless mind that now feels cheated of its rights by the all day requirements of housework. Second, to gain the power to put the duties of the coming day in their right relation and proportion—some to be held close, some kept at arm's length. For many this hour can be best gained after breakfast when the children have gone to school and the grown members to their work outside. A farmer's wife who had moved to town made this speech over a pound of bacon just delivered by the grocer: "I miss my pork barrel. Down in the cool, quiet cellar where I went to cut the pork before breakfast, I always took time to say my prayers and straighten out the day ahead of me."

CREEDS FOR 1914

We print two creeds that have been sent to us, both nobly stated and both appealing to large groups of earnest women.

A Woman's Creed for 1914

My home is my profession.

I will apply to homemaking the same science and culture demanded by any other profession.

I will not be the servant but the master of my work.

I will protect my home interests; if need be, in town, state and national affairs.

Above all, I will hold myself love's high priestess—that more love and more life may be.—*Christine Frederick.*

A Creed of Work for Women[1]

I believe that every woman needs a skilled occupation developed to the degree of possible self-support.

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[1] Reprinted from the *American Magazine*, June, 1913.

She needs it commercially, for an insurance against reverses.

She needs it socially, for a comprehending sympathy with the world's workers.

She needs it intellectually, for a constructive habit of mind which makes knowledge usable.

She needs it ethically, for a courageous willingness to do her share of the world's work.

She needs it aesthetically, for an understanding of harmony relationships as determining factors in conduct and work.

I believe that every young woman should practise this skilled occupation, up to the time of her marriage, for gainful ends with deliberate intent to acquire therefrom the widest possible professional and financial experience.

I believe that every woman should expect marriage to interrupt for some years the pursuit of any regular gainful occupation; that she should pre-arrange with her husband some equitable division of the family income such as will insure a genuine partnership, rather than a position of dependence (on either side); and that she should focus her chief thought during the early youth of her children upon the science and art of wise family life.

I believe that every woman should hope to return, in the second leisure of middle age, to some application of her early skilled occupation,—either as an unsalaried worker in some one of its social phases, or, if income be an object, as a salaried worker in a phase of it requiring maturity and social experience.

I believe that this general policy of economic service for American women would yield generous by-products of intelligence, responsibility and contentment.

—*Laura Drake Gill.*

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BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS at the price listed.

Nutrition and Diet. By Emma Conley New York. American Book Company. $0.60. By mail of the Journal, $0.65.

This text-book for secondary schools is designed to replace the time-consuming method of note-taking by the pupils. The keynote of the book may be expressed in the words of the author: "The important point is to learn how to plan meals easily, quickly, and accurately according to any standard." Part I discusses the principles of nutrition, and the application of these principles to the practical planning and serving of meals. Actual menus are given for six people and the calories of protein, fat, and carbohydrate per day are worked out with the aid of simple tables which obviate the necessity of long and irksome calculations. The cost of food and labor are also considered in the planning of the menus.

Part II deals with a detailed study of our ordinary foods with reference to structure, composition, nutritive value, and processes of manufacture. Technical terms and classifications are included in the text but the main emphasis is laid on the well established facts of nutrition and their relation to health and efficiency.

It is not easy to simplify the teachings of science without occasionally making statements that are not wholly clear to one unfamiliar with the details of laboratory work. The following statement is a case in point. "The body needs a certain amount of food daily to supply it with energy needed to maintain normal bodily temperature and for work and muscular activity." This does not cover the case. If body temperature is mentioned something more should be said. Body temperature is a balance between heat produced by work—internal and external —and heat eliminated. It is only when heat is very rapidly lost that energy is changed to heat to maintain normal bodily temperature.

The Chemical Composition of Florida Oranges. By A. M. Henry, Fla. Quart. Bul., Dept. Agr., 23, 1913, no. 2, pt. 2, pp. 53, pls. 2.

This publication reports the results of a chemical examination of fruit, in various stages of ripeness, obtained from the principal orange growing districts of the state.

Full analytical data are given together with methods of analysis. It was found that fruit which contained not over 1.25 per cent of acid was always edible and desirable, and as a result of this investigation the following standard for oranges was recommended: "Orange, sweet orange, is the ripe, mature fruit of *Citrus aurantium*, the juice of which contains not more than 1.25 per cent by weight of total acid, determined as crystallized citric acid."

Sugar and Acid in Oranges and Grapefruit. By S. E. Collison, Fla. Sta. Bul. 115, 1913, pp. 23.

Results are reported of analyses of over 500 lots of oranges and grapefruit. According to the author, the results show that there is a gradual increase of total sugar and a gradual decrease of acidity as the oranges mature. Apparently all

the acid of the fruit is formed early in the season, while sugar continues to be formed until maturity. In oranges both sucrose and reducing sugars increase at about the same rate, with the former averaging a little higher than the latter.

"For grapefruit the increase of sugar and decrease of acid is apparent, but not nearly in so marked a degree as in the orange. After grapefruit reach maturity there is a noticeable increase in reducing sugar, with a corresponding decrease in sucrose, pointing to a breaking down of sucrose into dextrose and fructose.

"Consideration of all the data presented establishes the fact that the demarkation between fruit classified as sour and that classified as sweet lies near the ratio of one of acid (anhydrous) to seven of sugar, in the grade here called tart. In a similar way the demarkation between fruit classified as very sour and that classified as sour lies near the ratio of one of acid (anhydrous) to four of sugar."

Some Results Obtained in Studying Ripening Bananas with the Respiration Calorimeter. By C. F. Langworthy and R. D. Milner, U. S. Dept. Agr. Yearbook 1912, pp. 293–308.

Data regarding the changes which take place in ripening bananas are summarized and the results of an experimental study of the ripening of this fruit made with a respiration calorimeter of special construction briefly reported.

The results which have been obtained show that the ripening changes progress regularly to a maximum and then decline; that at its greatest intensity the heat production is equivalent to about one-half calorie per hour per kilogram of bananas. "The heat liberated is a measure of the activity of one or more of the ripening processes. Analysis has shown that during ripening the banana starch is transformed into cane sugar and the cane sugar into invert sugar, and that there are important changes in the character of the tannin compounds, and that other changes occur, brought about by the production of aroma and flavor bodies, and perhaps in other ways. It has also been found that in addition to the transformation of carbohydrates there is an actual loss of this food constituent during ripening. From the data for oxygen consumption, carbon dioxid, and heat output it appears that the heat liberated by the ripening bananas is largely due to the destruction of carbohydrate."

The results which are reported and discussed represent only part of the experimental data which have been accumulated. "No attempt is made at this time to draw deductions regarding the practical applications which can be made, as this may be done more properly when experiments now under way are completed."

Sugar and Its Value as Food. By Mary H. Abel, U. S. Dept. Agr., Farmers' Bul. 535, pp. 32.

This bulletin is an extension and revision of an earlier Farmers' Bulletin (No. 93) of similar title.

The chemical composition and characteristics of sugars of different kinds, commercial glucose, and other similar products made from starch, the source and quality of sugars, the food value of sugar, table sirups, molasses, and sugar cane, and similar questions are discussed, as well as the practical use of sugar in the ordinary dietary and the dietary of children.

The Price of Meat in Paris. (Le Prix de la Viande à Paris). By Paul Vincey. Paris. 1912, pp. 151, pls. 6, figs. 57. Privately printed. Fr. 7.50.

This pamphlet is among the recent contributions to the study of the cost of living in France. The statistics which it gives are based on the official market reports of the Police and of the Prefecture of the Seine and include wholesale and retail figures for beef, mutton and pork from 1840–1911, and for veal and horse meat from 1866–7 to 1911.

The three special points which the author tries to explain from a study of these prices are: (1) Variations in the wholesale and retail prices of meat; (2) the increase of price caused by the retail sale of meat in small city shops; and (3) the distribution of the proceeds of the sale of meats in Paris among producers and middlemen.

He concludes that, "on the average, of every franc spent by the consumer, 76 centimes go to the original producer, 2 centimes to the railways, 1 centime to the cattle commissioners, 5 centimes to the city of Paris for 'octroi' duties, slaughter-house and market fees, etc., 3 centimes to the wholesale dealers, and 13 centimes to the retail dealers."

One of the interesting features of the book is the plates given in the appendix which show the methods of cutting meat in vogue in the Paris markets in 1851 and today and the names of the different cuts. The ordinary French-English dictionary throws little or no light on the exact meaning of such terms, and sketches of this kind are, therefore, of unusual help to anyone interested in French meats and meat dishes.

Fifty Years in a Maryland Kitchen. By Mrs. B. C. Howard. Baltimore: Norman Remington Co. 1913, 5th edition, pp. xxi + 419. $1.50. By mail of the Journal, $1.62.

This new edition of a cookbook well known to an earlier generation and long out of print was made, the publisher states, to meet a demand for it. It was originally published to aid certain benevolent undertakings and contained recipes which, with few exceptions, had been tested in the author's own family, and which were selected from a collection made during a period of more than fifty years.

The present edition has many additional recipes "long in use in Maryland, Virginia, and other parts of the South." The book includes a long list of dishes, many typical of times when eggs, butter and cream were lavishly used and, as a whole, gives a good selection of the old-time dishes which we associate with southern hospitality.

The numerous recipes for corn meal, for hominy and rice, for pickles and preserves (some unusual like May apple preserve, "far prettier than limes and almost as good," Haw jelly, and Fox grape jam) afford interesting examples of the ways employed to secure variety in the diet from home grown materials or the food supplies generally available in times when cold storage and improved transportation did not bring all countries and seasons to our doors.

A Book of House Plans. By W. J. Butterfield and H. W. Tuttle, Architects. New York: McBride, Nast and Company. $2. By mail of the Journal, $2.20.

This book will be welcomed by those who have tried often without success to find really good designs for inexpensive houses. The statement, "Homes of char-

acter, costing $3,000 to $6,000" seems fully justified in the twenty-one different types of houses presented. In each case the floor plans and elevation are shown so that the builder can form a good mental picture both of the exterior and interior. Moreover the designs cover a wider range of types than are usually given in small house plans. Various types of English and Dutch houses are shown, as well as Colonial, and even an Italian villa and the Spanish Mission house. "The examples accurately portray the spirit and architectural characteristics of their respective styles."

Other good features of the book are the explanations concerning the essentials of good architecture; the chapter on cost with actual figures for different parts of the country; the relation of the landscape work to the house and the necessity for considering this in making a harmonious effect. The authors seem to have accomplished their aim which is stated as follows: "The aim of the authors has been to emphasize the really essential features and eliminate all that might be considered superfluous or not consistent in a house of moderate cost Simplicity of plan and exterior treatment means economy but not necessarily ugliness. The success of an architectural design, in a building of any description depends principally upon its proportion, scale and fenestration, and no amount of elaboration can atone for a poorly proportioned building."

A Book of Distinctive Interiors. Edited by William A. Vollmer. New York: McBride, Nast and Company. $1. By mail of the Journal, $1.14.

This is a second edition of the books written to help the woman to decorate and furnish her home in good taste. The table of contents shows that the essential rooms of the home, viz., the living room, the dining room, the bed room, bath room, nursery and kitchen, have been considered as well as types of halls and stairways.

The author says there are probably two or three dozen ways that the living room can be planned and decorated and at the same time be comfortable and attractive. He then proceeds to give illustrations of a number of these ways which do have distinctive features, sometimes in the treatment of the fireplace, the ceiling or side walls, or in the furniture combinations. The colonial type prevails though there are examples of the English and Dutch builders. It seems unfortunate that the following statement should have been left without a word of warning as to the *kind* of red suitable for north rooms: "As a general color rule for decoration, red should be used for north rooms." Golden yellow is often much more effective and gives the impression of a sunlight quite impossible to the shade of red generally used. Some criticism may be given to the illustrations of both bed rooms and living rooms because of too much furniture for a place of rest and too little space in which to live. The dining rooms shown are varied, simple and attractive and there are very good suggestions in the illustrations of the kitchens and of that difficult problem, the stairs.

On the whole the book has much to commend it.

Opportunities in the Field of Nursing. New York: Nursing and Health Branch of the Alumnae Association of Teachers' College, Columbia University. Pp. 44. $0.10.

This pamphlet aims to provide the public, and particularly young women just leaving school or college, with definite information about the modern profession of nursing.

A brief historical note traces the development of nursing to its present status, shows the general scope of the work today, and devotes a brief descriptive paragraph to each of the special branches of nursing. These are seen to be many and varied, and by the time we have followed the modern nurse into hospitals, sanataria, tenement houses, public schools, health departments, shops and factories, it is impossible not to recognize the importance of her services for public welfare; and it is easy to see that a work so filled with human interest, ministering in so vital a way to human necessities, and touching life at so many points, must be very satisfying to those who perform it.

The necessity for careful preparation is evident, and is strongly urged; and valuable information is given concerning training schools for nurses and their standards of work. Subjects of study, character of instruction, facilities for training, and conditions of living are discussed. Young women in choosing their work should study carefully this authoritative material concerning one of the rapidly growing and more important modern professions.

School Hygiene. By Fletcher B. Dresslar. New York: The Macmillan Company. 1913, pp. xi + 369, figs. 51. $1.25. By mail of the Journal, $1.37.

This handbook, which is one of the Brief Course Series in Education, discusses hygiene in its relation to schools and pupils in language perfectly intelligible to the "busy teachers" for whom it is intended, or even for the non-pedagogic reader.

Each of the 26 chapters discusses a different phase of the subject, but the topics presented fall into two general groups: Those dealing with the physical environment of the school child, and those dealing with the "proper adjustment of the subjects of the curriculum to the mental powers and needs of the children."

In the first group, which occupies the greater part of the book, we find discussions of the location and construction of buildings and of their lighting, ventilating, heating, sanitary equipment, and furniture. In the second group, emphasis is laid on such points as the need of medical inspection, the care of vision, hearing, and teeth of pupils, the treatment of stuttering, the significance of fatigue, and the care of exceptional children. The proper methods of cleaning the school rooms and their contents, and the qualifications and duties of the school janitor are also discussed.

In most instances, a practical suggestion is presented with the theoretical consideration. It may seem a counsel of perfection to ask any but very exceptional schools to come up to the standard suggested for all the points mentioned. Nevertheless the book encourages the belief that a decided improvement is not too much to hope for, even in country schools.

Training the Boy. By William A. McKeever. New York: The Macmillan Company. 1913, pp. xviii + 368. $1.50. By mail of the Journal, $1.62.

This book should be in the hands of every person who has anything to do with boys—parents, teachers, juvenile court officers, and all other social workers. "The motto of this book may be expressed in these words: *Train the whole boy and not merely a part of him.* . . . it has been my purpose to attempt to sketch a practical plan for rounding out the whole boy, and to place the emphasis upon all rather than upon some of the forces necessary for such complete training." These statements from the author's preface express his aims. Although this claim is very preten-

tious for a single book, twenty-four sane, well organized chapters go far in convincing one that the author has succeeded in offering plans for this complete training.

The book is divided into five parts, dealing respectively with Industrial Training, Social Training, Habit Training, Vocational Training, and Service Training. Under Industrial Training, the author portrays the necessity and means of developing an intelligent and appreciative knowledge of, and feeling for, physical activity and work by participation as means of wholesome growth, physical and mental. He discusses possibilities in the pre-school period, vacation employment and ajustments during the school period for both in-school and out-of-school activities. Employment for wages with its methods, values and dangers is carefully considered. Play, recreation, and social development through other coöperative social experiences receive an unusually discriminating and common sense treatment in part two. In this difficult phase of boy training, as in that of habit formation where problems of good habits, bad habits, and the sex question are discussed, the author shows his keen appreciation of boy psychology and pedagogy. Any one having much to do with boys will welcome the practical suggestions found here. The chapters on vocational training and vocational guidance are equally fundamental and suggestive. Service training includes a discussion of preparation for citizenship, social service, home life, marriage and parenthood, and for the religious life. Here again the author draws the issue sharply, and deals directly and forcefully with vital problems.

The treatment throughout is wholesome and helpful. The author knows the boy—his limitations, temptations, and impulses for wrong doing, as well as his ambitions, possibilities, and aspirations. He knows how to direct these for the well-being of the whole boy.

Thirty-five well chosen illustrations add much to the attractiveness and forcefulness of the book. Each chapter is followed by a brief and carefully selected bibliography.

Historical Costumes. Illus. London News [Amer. Ed.], 53, 1913, no. 1387, pp. 842, 843, figs. 8.

A brief note with reproductions of photographs, regarding the Talbot Hughes collection of costumes recently purchased as a gift for the Victoria and Albert Museum.

The collection includes over two thousand pieces of "wonderful fabric and design forming almost one hundred and fifty costumes complete from the Tudor period down to the present time. It shows the development of fashions and designs, fabrics and embroideries of the finest and best sorts.

Silk Manufacturing and Its Problems. By James Chittick. New York: James Chittick. 1913, pp. 432 + 130. $2.80. By mail of the Journal, $3.

This book, by a well known authority, gives detailed and comprehensive information on the subject of silk manufacturing, beginning with the choice of mill location, and making clear the laws which govern the operation of a large business. The purchase, classification, and characteristics of raw materials are taken up in detail, and all processes of manufacture, expense of production, and problems which are likely to arise, are gone into thoroughly.

It embraces, in short, a mass of accurate inside information, relating to silk manufacturing and distributing, never before presented in print, and most of it of a kind most jealously guarded and very difficult to obtain.

Although this is distinctly a book for mill men, it contains much valuable information for teachers of textiles, and a number of points are given which one does not frequently run across. Especially valuable are the paragraphs on the different operations of dyeing.

Syllabus of Home Economics. Baltimore: American Home Economics Association. 1913, pp. 69. Paper, $0.50; Cloth, $1.

In this syllabus, which was prepared for the American Home Economics Association, by its committee on nomenclature, the attempt has been made to present the possible content of Home Economics, in schematic form, grouped under the main divisions, food, clothing, shelter, and household and institution management. The first three are subdivided primarily into selection, preparation and use, and the last into material basis, social contracts, activities and functions, and aims and results. These topics are further subdivided to suit the individual cases.

In the introduction the use of the syllabus as an aid to the teacher in selecting the content of courses of instruction for different institutions and for different grades is discussed.

In preparing this report special stress has been laid on physics, chemistry, and biology, economics, sociology, and other sciences which form the background of the complex called Home Economics, or are closely related to it.

As a whole, the syllabus makes it clear that Home Economics is a subject worthy of serious study. "Rightly combined with language, literature, and other long-established subjects, Home Economics can and does provide a well rounded college course of full cultural value and does not sacrifice anything essential to a broad education. Those who have given the subject most attention believe that, in addition, it has a special value in preparing directly for life and its problems."

The report appears as publication No. 1 for the Ellen H. Richards Memorial Fund.

Webster's International Dictionary. Boston: G. and C. Merriam Company. 1913, pp. 2700. Illus. Regular edition, $12; India-paper, $15.

This is a new encyclopedia-dictionary having as a special feature the divided page to provide for abbreviated treatment of unimportant and seldom-used words. Among its new definitions are those of nutrition and other Home Economics terms.

Pop Corn for the Home. By C. P. Hartley, Physiologist in Charge of Crop Investigations, and J. G. Willier Scientific Assistant, Office of Corn Investigations, Bureau of Plant Industry, pp. 13, figs. 9. U. S. Dept. Agr. Farmers' Bulletin 553. Some recipes are given.

List of References on Home Economics, and List of References on Rural Life and Culture. Department of the Interior, Bureau of Education, Washington, D. C., June, 1913.

BOOKS RECEIVED

Nutritional Physiology. By Percy Goldthwait Stiles. Philadelphia: W. B. Saunders Company. Pp. 271. $1.25. By mail of the Journal, $1.35

Preventive Medicine and Hygiene. By Milton J. Rosenau, M.D. New York: D. Appleton and Company. Pp. 1074. $6.

The Care and Feeding of Children. By L. Emmett Holt, M.D. New York: D. Appleton and Company. Sixth edition. $0.75. By mail of the Journal, $0.82.

The Baby. By Daniel Rollins, M. D. Boston: Whitcomb and Barrows. $1. By mail of the Journal, $1.08.

How I Kept My Baby Well. By Anna G. Moyes. Baltimore: Warwick and York. Pp. 193. $1.25. By mail of the Journal, $1.35

Around-the-World Cook Book. By Mary Louise Barroll. New York: The Century Company. Pp. 360. $1.50. By mail of the Journal, $1.62.

International Cook Book. By Alex. Filippini. New York: Doubleday Page and Company. Pp. 1059. $1. By mail of the Journal, $1.20.

The Complete Housekeeper. By Emily Holt. New York: Doubleday Page and Company. Pp. 381. $1. By mail of the Journal, $1.17.

The One-Maid Book of Cookery. By A. E. Congreve. New York: E. P. Dutton and Company. Pp. 217. $1. By mail of the Journal, $1.08.

Recipes and Menus for Fifty. As used in the School of Domestic Science of the Boston Y. W. C. A. By Frances Lowe Smith. Boston: Whitcomb and Barrows. $1.50. By mail of the Journal, $1.62.

Paper Bag Cookery. By Nicholas Soyer. New York: Sturgis and Walton. $0.60. By mail of the Journal, $0.65

From Kitchen to Garret. By Virginia Terhune Van de Water. New York: Sturgis and Walton. $0.75. By mail of the Journal, $0.84.

Text Book on Domestic Art. By Mrs. Ingalls. San Francisco: H. S. Crocker Company. Pp. 250. $1.50. By mail of the Journal, $1.65.

Bungalows. By Henry H. Saylor. New York: McBride, Nast and Company. $1.50. By mail of the Journal, $1.70.

The Practical Garden Book. By Liberty Hyde Bailey. New York: Macmillan and Company. $0.50. By mail of the Journal, $0.55

The Delinquent Child and the Home. By Sophonisba Breckenridge and Edith Abbott. New York: Chartities Publication Committee. Pp. 360. $2.

Neighborhood Entertainments. By Renée B. Stern. New York: Sturgis and Walton. $0.75. By mail of the Journal. $0.84.

Vocations for Girls. By Mary A. Laselle and Katherine Wiley. New York: Houghton, Mifflin Company. $0.85. By mail of the JOURNAL, $0.90.

Webster's International Dictionary. Boston: G. and C. Merriam Company. Regular edition, $12; India-paper, $15.

NEWS FROM THE FIELD

Seattle Home Economics Association

The Seattle Home Economics Association will hold its meetings on the second Monday of each month. The program for the whole year was made out in advance and will include addresses on the following subjects: Market Regulations and their Enforcement, Vocational Guidance, Violations of the State Food Laws, The Educational Value of Home Economics, and the Work of the Industrial Centers.

They report a large membership, and progressive work along the lines of investigation and regulation of markets and food supply.

Texas Home Economics Association

The November meeting of the Texas Home Economics Association was held in Dallas, Texas, in connection with the meeting of the State Teachers' Association. The committee, appointed last November, reported on the Constitution and By-Laws. New plans were made for the coming year and a large membership enrolled.

The work of the year will be almost entirely directed toward the improvement of the school courses throughout the state, raising the standard of the work, and unifying it. A committee was appointed to issue a syllabus, which will be published by the University of Texas.

The branch is looking forward to an active year in which much will be accomplished for the cause of Home Economics.

New England Home Economics Association

The regular meeting of the New England Home Economics Association was held at 6 Marlboro St., Boston, on December 3, Ellen H. Richards day.

After brief remarks, appropriate for the day, the program took the form of a discussion on the subject: The Cash Value of Woman's Labor in the Home, (*a*) Attitude of mind toward housework, (*b*) What manual work should a woman do in the home? Subjects such as When is it best to send out your laundry? were then discussed as suggested by the audience.

Philadelphia Home Economics Association

The Current Topics Committee had charge of the December meeting of the Philadelphia Home Economics Association. Miss Hanna Hill of Drexel Institute gave a very helpful list of articles to be found in the recent magazines.

The Pure Food Committee in charge of the January meeting arranged for addresses by Mr. Charles H. La Wall, State Chemist of the Dairy and Food, and Mr. A. J. Hankell, Chief of the Division of Food Inspection.

Missouri Association of Household Arts and Sciences

The Missouri Association of Household Arts and Sciences met November 6 and 7 at St. Louis in connection with the State Teachers' Association. An idea of the program may be gained from the following topics: Ideals in Dress, Lessons in Laundry Work, Possibilities for Vocational Training along the Line of Domestic Science and Art, and Extent to which Universities have Accepted Home Economics Credits for Entrance.

A banquet which was held on Friday evening was most successful. About sixty attended.

At the business meeting the following officers were elected for next year: President, Miss Essie Margaret Heyle, Kansas City, Mo.; Vice-President, Miss Jennie Gilmore, St. Louis, Mo.; Secretary, Miss Jensen, St. Joseph. Mo.; Treasurer, Miss Mary Chapin, Cape Girardeau, Mo.

Plans were worked out by which the state is to be districted for the formation of local sections.

Infant Mortality Conference

At the Fourth Annual Meeting of the American Association for Study and Prevention of Infant Mortality, held in Washington, D. C., November 14 to 17, the section on Public School Education for Preventing Infant Mortality was of special interest to Home Economics workers. Dr. Helen Putnam, Chairman of this session said: "Society in self preservation must teach women the right care of babies. Mothers are entitled at our hands to the time and the place to care for their children. Babies have the right to the care of intelligent mothers instead of being left to the care of elementary school children."

Dr. Putnam scored the "Little Mothers" movement. She said that it suggests cheating mothers and babies of each other, belittles ideals of motherhood, and imposes on little daughters duties beyond their mentality and physical ability.

Continuing the discussion, she said: "Only a small fraction of elementary school children enter high school. We must have continuation schools for our nearly twenty million young men and women between fifteen and twenty-four years of age in these strategic years when they are beginning to think about and to undertake home making. Here they can combine wage earning with education in their awakening interests and immediate needs, both to increase their economic efficiency and their knowledge of duties that cannot be fitly given in children's elementary schools.

"It is suicidal for the nation to cease educational direction of its youth before adolescence, as we have done for nine-tenths of ours. This is one reason for our indifference to the well-being of infants, for our lack of birth registration, and for our infant mortality rate whose most favorable estimate is one-third down the list of civilized nations that we distance by billions in wealth."

Others who took part in this session included Prof. Abbey L. Marlatt, Professor of Home Economics, University of Wisconsin; Mrs. Henrietta W. Calvin, Dean of the School of Domestic Science and Art, Oregon Agricultural College, Corvallis, Oregon; Miss Louise C. Lippitt; Dr. A. C. True of the Department of Agriculture; Miss Caroline Hunt; and Miss Emma Suter Jacobs, Director of Domestic Science of the Public Schools of Washington. Miss Jacobs outlined a course for continuation (vocational) schools of home making; for training mothers' helpers; for agents of the Board of Health, including the visiting nurses, sanitary inspectors, and visit-

ing housekeepers; and for future and present parenthood. Miss Marlatt gave an interesting summary, based on reports and correspondence with leading educators in this country and abroad, on the need of vocational training in schools of home making for girls of sixteen years and older.

Summing up the work of the Section on Public School Education for Preventing Infant Mortality, Dr. Putnam said: "During the last two years we have petitioned each State Board of Education to secure the appointment of a Commission on Continuation Schools of Home Making, each to study conditions and needs in its state and report effective plans for meeting them through such continuation schools and classes. We have sent reports and reprints to several thousand superintendents and other educators; and have urged the matter in several of our educational journals with largest circulation and influence. It is reasonable to believe that this educational effort has had some influence in determining the fact that, whereas four years ago almost exclusive emphasis was laid on the economic need for continuation (vocational) schools, at present the states, cities and organizations engaged in planning courses for either sex almost invariably include health and its related interests —hygiene and sanitation concerned with the vocation and with the family."

The dominant note through all of the discussion at all of the sessions was the appeal for the specialized training necessary for effective work in the fight against infant mortality. The note was first struck in the session on Nursing and Social Work when the discussion culminated in a resolution urging the training schools for nurses to include practical training for baby welfare work in their courses. It was sounded in the session on Pediatrics in the frank recognition of the fact that few of the medical schools give adequate attention to pediatrics in their required courses. It was heard again in the sessions on Obstetrics in the appeal for better training in obstetrics in the medical schools, and again in the session on Eugenics and Continuation Schools in the emphasis laid on the necessity for training for parenthood.

The meeting was held under the presidency of Dr. L. Emmett Holt of New York. The president for the current year is Dr. J. Whitridge Williams, Professor of Obstetrics, and Dean of the Johns Hopkins Medical School, Baltimore, Md.

First International Exposition of Safety and Sanitation

England, Holland, and Switzerland were among the foreign governments that showed progress in accident prevention and sanitation at the First International Exposition of Safety and Sanitation held in New York City, December 11 to 20.

The British Home Office and Board of Trade demonstrated how English factories and workshops are being made healthier and safer.

Switzerland gave full details of the Swiss method of stamping out white slavery. The exhibit from Switzerland also covered every form of industrial activity of that country including the famous labor colonies, accident prevention, workmen's insurance, first aid to the injured, war hospitals, the work of the Swiss Red Cross, home industries and school hygiene.

The Holland government sent to the Exposition a model wood-working factory, showing how the workmen are protected against the dangerous machinery and fatal dusts; also a model Holland laundry with guarded machinery.

The various problems of the day such as safety for the worker and what it means to his family, the relationship between employer and employees, welfare, benefit and compensation work, together with all forms of sanitation and hygiene for improving factory, workshop and living conditions of workers and their families were presented and discussed by eminent authorities and leaders in this work. In terms of the subjects of addresses, some of the problems presented and discussed were as follows: Industrial Accidents, Safer Shops, Human Values, Accident Prevention, Care of the Injured, Industrial Hygiene, Sanitary Welfare of Workers, Proper Food for Workers, Occupational Diseases, Factory Lighting and Ventilation, and What Accident Prevention Means to the Worker's Family.

The International Congress of Farm Women is auxiliary to the International Dry-Farming Congress, whose work for the spread of better farm methods has been felt in every nation of the world within the last few years.

The Dry-Farming Congress

The eighth annual session of the International Dry-Farming Congress was held in Tulsa, Oklahoma, October 27–31, 1913, at the same time as that of the International Congress of Farm Women. Official delegates attended from twenty states, from Canada and twenty-two foreign countries.

At this meeting the Congress ratified the affiliation with the National Council of Farm Women.

One building was devoted to a complete Exposition of farm home products, which included canned fruits, vegetables, meats, pickles, butter, bread, etc. There were a number of individual and collective exhibits from counties and districts, from farm women's clubs, schools, etc., and a special department for boys' and girls' classes.

A valuable feature was an exhibit for the farm home, of time and labor saving devices which were displayed in a "model farm kitchen." Nothing was allowed that is not practical and helpful.

The Department of Agriculture was one of the exhibitors, and paid especial attention to women's interests. For instance, the Bureau of Chemistry showed material illustrating the manufacture of gelatin and a number of other food products, data regarding the composition of infant and invalid foods, and material illustrating food adulteration practices. The boys' corn club work and the girls' canning work, of the Bureau of Plant Industry, were illustrated by a large series of fine photographs. Many of the Bureaus of the Department of Agriculture have issued bulletins which are of interest to the housewife, and this material was brought together and arranged under appropriate headings. Included in this, were the bulletins issued in connection with the Nutrition Investigations, and the food and diet charts. A special exhibit was made by the Nutrition Investigations illustrating the composition and nutritive value of cowpeas and Kafir corn in comparison with Indian corn. Miss Caroline L. Hunt, of the Department of Agriculture, was present to explain this exhibit and to show housekeepers good methods of using Kafir corn and cowpeas in the diet.

The program included physical and mental betterment, social and religious life, the care of children, their food, clothing and education, home sanitation, coöperation between producer and consumer, and other similar subjects, together with vocational occupations for farm women, including dairying, poultry culture, etc.

Demonstrations in all branches of the work were carried on each day, including the actual cooking and serving of meals in a model farm kitchen.

The speakers at this Congress were notable men and women and fully two-thirds of them were farm women who have actually done the things which they described or discussed.

Farmers Institute Workers

The American Association of Farmers' Institute Workers met in Washington, D. C., November 10 to 12. Progress is indicated by the names of some of the committees: Coöperation with other Educational Agencies, Movable Schools of Agriculture, Boys' and Girls' Institutes, Women's Institutes.

In five sessions, one of which was a women's session, they discussed the farmers' problems under such headings as these: The Farm Laborer, The Tenant Farmer, The Recent Immigrant, The Rural School Teacher, The Country Pastor, and State Funds for Women's Institutes.

National Conservation Exposition

The National Conservation Exposition held at Knoxville, Tennessee, during September and October taught by its general plan and its minute detail, the conservation of all our national resources. It was in every sense an educational exhibit, totally lacking in side shows and booths for sellers of oriental wares.

At the entrance, the Woman's Building displayed woman's work in the home and the home labor saving devices. In the Arts and Crafts division work was shown from Pratt Institute, and such colleges as Sophie Newcomb. One wing of the building was furnished in a suite to show good taste and economy in housefurnishing together with the labor saving devices to conserve woman's strength and time. The price of the furnishing of each room was plainly displayed. Instead of having a heterogeneous mixture of jellies, pickles, and cakes sent in for prizes, each week one type of food was judged, so that the pantry shelves in this model suite were always full of attractive well cooked food.

Since so many of the primitive industries are still kept alive in Tennessee it is appropriate that the loom and wheel should have had a place beside the more modern exhibits. Here a real mountain woman explained to the ignorant city crowd the meaning and use of bobbin and flyer, of harness and treadle. When two university students showed great interest in, and ignorance of, the loom the mountain woman remarked, "Well, I ain't old as arry one o' you, and I know all about this 'ere loom, but then 'taint everybody has the same advantages."

The University of Tennessee showed among other things a well equipped laboratory for Home Economics teaching, together with work done by the students in dietetics, in house planning, in textiles and clothing.

The health exhibit in the Liberal Arts Building was one of the best of its kind ever gotten together.

Industrial hygiene as carried out by the National Cash Register Company at the cost of six cents per person per day was shown in moving pictures and charts.

The Anti-Tuberculosis League had every device to show the use of fresh air, good food, and cleanliness as a preventative and cure for disease; and the bottle of patent cure-all flashed a death's head every few seconds to emphasize its deadly work.

The hookworm campaign, the necessity for pure drinking water, and the fight against the typhoid fly were all displayed in posters or models of the right and wrong way to live.

The flies (on wires) actually flew from their birth place in a stable to the open window of a tiny cottage, there to walk upon the table and deposit their load of filth and germs.

The Russell Sage Foundation coöperated with the Exposition Board to show agencies for Child Welfare. The social center, the vocational training, the boy scout and camp fire girl movements, juvenile court, medical inspection of school children—all agencies for the care and training of the youth of the land were brought vividly to the attention of the public.

Wisconsin Household Economics Committee

Under the direction of Miss Pearl MacDonald, the Household Economies Committee of the Wisconsin Federation of Women's Clubs is actively engaged in work which will not only aid the city and town families but will also extend to the housewives and schools in rural districts.

They are placing Home Economics books and magazines in the libraries, urging women to avail themselves of the school laboratories, furnishing outlines of study to women's clubs, sending out questionnaires to principals in order to determine to what extent Home Economics is taught in the schools, and coöperating with the legislative committee to secure satisfactory pure food laws.

Richards Day Observed

Richards Day, December 3, was observed in the Polytechnic School, San Francisco by an exhibit and readings by the students. Old Paisley shawls, a sampler made in 1700, Spanish lace worn a century ago, old china, books and watches were displayed. The modern contribution to the exhibit was the hats made by the girls who are to wear them when they graduate.

The readings were on the Life of Ellen H. Richards, Colonial Cooking, European Methods of Cooking, Quaker Laces, and Hints on Clothing.

School for Housekeepers

A School for Housekeepers was held January 19 to 30, in the Woman's Building, University of Illinois.

Lectures were planned to give information on the house, on food, clothing and health; they included the following: The Illinois Way of Neighborhood Planting, Good and Bad Architecture and Why, Appreciation of Pictures, Some Suggestions for the Home Library, Care of the House, Good Taste in Furnishings, Why Household Science Clubs Should be Organized Among Housekeepers, System of Lighting for the Farm Home, Systems of Water Distribution in the Farm Home, Food and Its Function in the Body, Planning Meals, Food for the Sick, Care of Milk in the Home, Pure Food Legislation, Table Setting and Service, Home Canning, Rural School Lunches and Equipment, Vegetables, Food for the Child, Infant Feeding, Farm Marketing, Some Points in Dressmaking, Good Taste in Dress, Choosing Material for Clothing, Home Millinery, Health in the Home, and Home Care of the Sick.

Extension Courses in cooking and sewing will be given, beginning February 2 and continuing for four weeks. These are free, have no prerequisites and are not given for credit. Owing to the crowded conditions in the kitchens and sewing rooms, only a limited number can be received in these courses. Candidates will be assigned places in the order of their application. Preference is given to non-residents of Champaign and Urbana.

Pratt Institute, School of Household Science and Arts

Last June the School expected to have the unusual experience of beginning this year with every one of the forty-two members of its staff of 1912–13 returning. But during the summer one instructor changed her personal plans suddenly, marrying and going to Cuba to live. There was therefore one vacancy to be filled. This was in teaching millinery for home use, and Miss Hester B. Lyon (Mechanics Institute) was appointed. Three additions were made to the staff. Miss Gwladys Hughes (Normal Household Arts, Pratt Institute, 1913) was appointed as assistant in dressmaking for half-time. Miss Hughes will spend part of her free time in a dressmaking establishment, in order to gain further experience in dressmaking under trade conditions. Mr. Arthur L. Guptill was appointed assistant in House Planning and Furnishing. Mr. Guptill is a graduate architect, who spends part of his time in an architect's office, and part in teaching. For this particular problem he is working under the direction of Miss Mary Quinn, the school instructor in design. Miss Wanda Broczkoski (Institutional Household Science, Pratt Institute, 1912) has been appointed in charge of the cookery supply room and as assistant in the lunchroom. In the former work she relieves an instructor to give her time for assistance to other instructors.

The School opened with the maximum possible enrollment of entering normal students—eighty, and with the same in institutional household science—forty.

Household Science Department, University of Illinois

The University of Illinois reports a largely increased enrollment in its Household Science Department. The new addition to the Woman's Building is practically equipped, giving increased opportunity for all lines of the work. The work formerly carried on by Miss Harriet Rinaker, now Mrs. Paul E. Howe of New York City, has been divided and is now conducted by Miss Florence Harrison, B.S., University of Illinois, '08, and Miss Olive Percival, B.S., University of Illinois, '10. The work in textiles, formerly given by Miss Charlotte M. Gibbs, now Mrs. Cecil E. Baker of Chicago, is in charge of Miss Lurene Seymour, Ph.B., University of Michigan, '95, B.S., Columbia University, '12.

Miss Harrison and Miss Crigler are uniting with Miss MacKay of Iowa Agricultural College in giving demonstrations at the National Dairy Show in Chicago.

Editorial in "Survey"

The *Survey* of December 6 in an eloquent editorial addressed to the new mayor of New York and his associates demands of them as their most important work, "the redemption of the school system, its closer adaptation to modern needs, its efficiency and practicality, the ennobling of its aims and the constant self-scrutiny of its methods, the development of a sounder loyalty and a stronger *esprit de corps* among the teachers, a clearer recognition of the direct economic function of the schools, while not obscuring the truth that the child is above all a spiritual being

and that to starve his spiritual nature is the worst, because the most complete, race suicide. In short, a twentieth century school system—one worthy of the splendid city, equal to the gigantic need, generously conceived, adequately financed, rigidly scrutinized, popularly understood and strong in a universal affection.

"Next in importance to the schools are the health activities of the city. By discovering in infants and growing children minor physical defects, weaknesses and tendencies, and advising how they can be overcome or minimized; by controlling communicable diseases; by securing the purity of milk, meats, fruits and other food products; by scientific compilation and interpretation of vital statistics; by laboratory research and clinical study; and by a great campaign of educational propaganda on every subject of which popular knowledge will contribute to the public health, the health service will supplement the professional practice of medicine and promote the normal growth of sound hygiene in the community. This will inevitably improve the racial stock, increase the proportion of fruitful marriages, and modify continually for the better the relation between the birth rate and the death rate. More and more of those who are born will develop into vigorous long-lived adults. There will be a great reduction in the loss from disease, orphanage, premature and violent deaths, as all deaths from fevers, poisons, infections, and occupational diseases should be called."

The Ellen Richards Research Prize

The Naples Table Association for Promoting Laboratory Research by Women has announced the offer of a seventh prize of $1000 for the best thesis written by a woman on a scientific subject. This thesis must embody new observations and new conclusions based on independent laboratory research in biological (including psychological), chemical, or physical science.

The theses offered in competition are to be presented to the Executive Committee of the Association and must be in the hands of the Chairman of the Committee on the Prize, Dr. Lillian Welsh, Goucher College, Baltimore, Md., before February 25, 1915. The title page of each manuscript must bear an assumed name; and the writer must send with her manuscript, a sealed envelope containing her application blank and superscribed with her assumed name.

The Association reserves the right to withhold the prize, if the theses presented are not, in the judgment of the regularly appointed Board of Examiners, or by such specialists as they may choose, of adequate merit to deserve the award.

The decision will be announced at the annual meeting in April, 1915.

In April, 1911, the prize was named the Ellen Richards Research Prize in recognition of the devoted service of Mrs. Richards as Chairman of the Committee on the Prize since its appointment in 1900.

School Lunch Committee Exhibit

The School Lunch Committee of the American Home Economics Association has an exhibit on School Feeding that was made originally for the Fourth International Congress on School Hygiene. This exhibit consists of two five panelled screens, each panel being 3 by 6 feet. The exhibit may be borrowed by any organization that desires to use it. The charges are the expense of transportation and five dollars a screen. For further information or a picture of the exhibit apply to Miss Boughton, Stock Exchange Building, Philadelphia.

The Pure Food Society and Food Inspection

According to the *British Food Journal*, a Pure Food and Health Society of Great Britain has recently been incorporated upon the same lines as the Royal Society for the Prevention of Cruelty to Children. The license of the Board of Trade practically establishes it as an institution authorized to supplement the work of the official Food Inspectors. It will employ a body of paid inspectors of its own, who will act as its agents in the warfare against unscrupulous food "fakers," and thus help to safeguard the public health and all honest traders. It has already been working for four years, but has labored hitherto under the difficulty of being a private society, officially unrecognized.

Teaching Positions—Philippine Islands

A distinguished educator from Columbia University who recently visited the Philippines says, in speaking of the schools, "I have visited many countries and studied the educational systems in all of them, but in no part of the world is there a system so perfectly adapted to social conditions of the people as in this country. The system here might well serve as a model to the rest of the world from the standpoint of adaptation to the needs of a country."

An examination is announced for March 11–12, 1914, in all of the principal cities of the United States, for securing a list of eligibles from which to make selections to fill positions in the Philippine teaching service.

The places to which those appointed will be assigned are: for men, supervisors of school districts, teachers of English, mathematics, history, science, manual training, agriculture; for women, teachers of domestic science and home economy.

This is a field which requires the services of young people of superior qualifications, excellent character and good preparation; who are able to maintain a position of influence among a rapidly developing people.

This is the last examination of the present school year and those appointed will be expected to sail for Manila within the next few months, ready for the opening of the new school year.

For information relative to the nature of the service and the examination, address Bureau of Insular Affairs, Washington, D. C.

The London Exposition of Rubber and Tropical Products

In June, 1914, there will be opened in London a tropical exposition, theoretically of a twofold nature, comprising the Fourth International Rubber and Allied Industries Exposition and one of International Cotton, Fibers, and Other Tropical Agriculture Products and Allied Industries. This exposition will be held in what is unquestionably the best possible place for such an affair of world-wide interest, and both the producers of raw products and the manufacturers and dealers in both raw and finished tropical staples will have a rare opportunity to meet and compare notes in the midst of probably the finest display of this class of the world's merchantable goods the public has ever seen.

His Majesty the King of England is patron of the combined expositions, and the organizing manager is A. Staines Manders, Esq., who organized the very successful Third Rubber and Allied Industries Exhibition in New York in the summer of

1912. The president of the rubber exposition is Sir Henry S. Blake, the ex-governor of Ceylon, Bahamas, Newfoundland, Jamaica, and Hongkong. The president of the cotton, fibers, and other tropical and agricultural products exhibition is Prof. Wyndham Dunstan, director of the Imperial Institute and president of the International Association of Tropical Agriculture and Colonial Development.

The exposition will open on Wednesday, June 24, and will close on Thursday, July 9. Together with the double exposition there will be held simultaneously an international congress of tropical agriculture which will be attended by delegates from all parts of the world.

It is interesting to note that the management has decided to create a palms and palm-products section on account of the tremendous importance of the cocoanut and its rival the oil palm—not to mention nipa, burí, sago, and several of the India palms which are rapidly increasing in importance in commerce.

The London County Council Technical Cookery School for Boys

Owing to the efforts of The Universal Cookery and Food Association, the London County Council has established a technical cookery school for boys at the Westminster Technical Institute, Vincent Square. S. W. J. Stuart Ker, M.A., is principal. The Association has the privilege of annually nominating four boys for free admission to the school, an annual grant of £50 being made to the London County Council for this purpose.

"The school has been established with the object of providing a course of scientific and technical instruction for boys in all branches of cookery, pastry and confectionery. The full course of instruction will cover a period of three years, and will include the technical or professional training of the pupils under a skilled chef-instructor and the improvement of their general education. The school is equipped with a kitchen, pastry and ice-making roof, larder and store rooms, fitted up with culinary appliances of the latest and most approved type."

Admission to the school is restricted to boys between fourteen and sixteen years of age who have passed the sixth standard or its equivalent.